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VOLUME 2. FOREIGN TRADE AND INTERNATIONAL FINANCE

SELECTED PAPERS

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LETTER OF TRANSMITTAL

FEBRUARY 27, 1986.

To the Members of the Joint Economic Committee:

Transmitted herewith for use by the Joint Economic Committee, Congress, and the interested public is a study consisting of a compilation of papers assessing the economies of East Europe entitled "East European Economies: Slow Growth in the 1980's, Volume 2—Foreign Trade and International Finance." Volume 1 in this series was published in 1985. A third volume containing studies of the individual countries of East Europe is also being transmitted. The present compilation is part of the committee's continuing effort to monitor economic trends in the Communist countries.

This volume looks at the economic and commercial relationships of East Europe and the rest of the world. One conclusion that may be drawn from the studies is that two important factors that contributed to economic growth during the 1970's have changed. Those factors are East Europe's access to Soviet oil at prices below world market prices, and the availability of Western credits. The changes in these areas contribute to the overall assessment that the region faces a future of slow growth.

We are grateful to the Congressional Research Service of the Library of Congress for making available the services of John P. Hardt to help plan the study. Dr. Hardt and Richard F. Kaufman of the committee staff coordinated and directed the project and edited the present volume. Dr. Hardt was assisted by Donna L. Gold of the Library staff. We are also grateful to the many government and private specialists who contributed papers to the study.

It should be understood that the views contained in the volume are those of the authors and not necessarily those of the Joint Economic Committee or of individual members.

Sincerely,

DAVID R. OBEY,
Chairman, Joint Economic Committee.

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HIGHLIGHTS

By John P. Hardt

The availability of Soviet oil at below world market prices and Western credit in a favorable market were among the major external factors that facilitated economic growth in Eastern Europe and Yugoslavia during the 1970's. These central ingredients of the past growth formula are no longer present. In fact, existing conditions now tend to militate against growth in the 1980's. First, for the past several years, East-West trade has required a net transfer of resources out of the Council for Mutual Economic Assistance (CMEA) in order to service their debts. This net transfer out may continue over to the next several years because, in the short term, the West is not likely to make enough new credits available to the CMEA countries to offset their debt-servicing costs. Second, the Soviets have turned the prices of oil and gas, as well as other terms of Soviet trade, against Eastern Europe placing an increased Soviet claim on domestic CMEA output. Third, the Soviets are calling for an end to CMEA-Six trade deficits with the U.S.S.R. and the repayment of outstanding CMEA debts owed to the U.S.S.R. Fourth, it will be difficult—if not impossible—for the CMEA countries to provide and maintain substantial subsidies to improve domestic living conditions at a time of slow growth and economic stringency. Austerity appears to be the likely economic policy of the CMEA-Six throughout the 1980's.

Modernization remains the centerpiece of continuing CMEA economic growth. For the CMEA-Six and Yugoslavia, the production of more machinery and consumer goods that meet world market standards is the measuring rod of success. To modernize, however, requires more imports of technology from the West. Eastern Europe and Yugoslavia first began to depend on Western technology transfers during the 1970's. In becoming partially reliant on world-level technology, they adopted a strategy similar to that of the Newly Industrialized Countries (NICs) in Asia. But their partial mastery of advanced technology has left them vulnerable to competition from the NICs, inhibited as they are by restraints on efficiency resulting from the twin burdens of autarchic central planning and the non-competitive security of the Soviet market.

The economic decline in Poland in 1981–82 was sharper and deeper than in any other East European country during the post-War period. Although each of the CMEA-Six countries and Yugoslavia experienced an economic slowdown and balance-of-payments problems, the GDR, Bulgaria, and Hungary fared moderately well, according to various criteria (e.g., GNP per capita growth, creditworthiness), Czechoslovakia and Romanian performance fell somewhere in between these extremes ranging from very poor (i.e., Poland) to moderately good.

Some problems and performance characteristics were common to all CMEA-Six countries and Yugoslavia. They included the following:

- Economic growth was faster in the early 1970's, guided by favorable external economic environment, than the late 1970's. 1976-80 and 1981-83 were the poor performance periods when recessions in both the Soviet Union and Western Europe contributed to the low ebb in Eastern Europe.
- Living standards increased more significantly in the early 1970's and then slowed down, leveling off in recent years. Again, this decline was due to developments in foreign trade, as well as domestic performance.
- Debt was not a short-run problem for any CMEA-Six country or Yugoslavia in the early 1970's. By the late 1970's and early 1980's, it had become a major problem.
- Industrial quality (modernization) and competitiveness in the world market had improved during the 1970's, but each East European country suffered from backwardness in industrial technology and lack of competitiveness in convertible currency markets.
- Agricultural performance was below—in some cases very much below—levels of comparable performance elsewhere. Each country would have materially benefited in their domestic economies and international trade by improvement in agricultural performance patterned on a Western model of efficiency.
- Import reduction in the late 1970's and early 1980's to meet the trade deficit and debt problems, and reduction in domestic investment in response to slow growth seriously reduced the prospects of future growth and modernization, while improving the short-run, hard-currency trade and credit positions.

Changes in the allocation of resources and reform in the planning and management systems are possible and might show significant results. The external factors of weather and the world market might improve and could be critical to economic performance. The conventional wisdom, however, is still toward continuity with the past. On balance, the views expressed herein tend toward the judgment that although economic improvement from policy change toward market simulating domestic and more open foreign economies and good fortune are possible and may be expressed as a priority of the leadership, the chances for such change are no better than an even odds bet and probably worse. Continuity suggests the likelihood of continued declining performance and aggravated economic problems—outcomes the current East European and Yugoslavian leaderships appear to consider unacceptable.

In making these assessments, there is a vexing problem with measurement. The quality of both the economic statistics released and the statistics gathered and used domestically has not improved; in some cases it has actually deteriorated. Conversion of domestic measures to a common unit (e.g., dollars), poses difficult, often subjective, problems.

Despite modest forecasts, the possibility of change in economic policy resulting in significantly improved economic performance in

Eastern and Southern Europe should not be discounted. The emphasis of current leaders on their troubled economic indicators not only suggests concern about the seriousness of the problems, but also expectations that policy changes within their power may improve both qualitative and quantitative performance. Specifically, leaders may find promise from the following steps:

Allocation: By indicating a policy of increased emphasis on investment and continued, if not enhanced, priority to consumption, improved economic performance is deemed possible. However, the prospects for a squeeze on resource allocations to serve Soviet needs, including defense, have been raised.

Reform: By centralizing economic planning, decentralizing management away from the traditional Party bureaucracy, emphasizing professionalism on all levels of planning and management, selectively making personnel changes, and demanding increased professional discipline throughout the economy, the question of the short-term significance of changes within the system has been raised anew.

Regional Policy: By stressing the need for completing the national infrastructure of transmission, transportation, and other means of resource mobility, the retarding effects of regional backwardness and resource dispersion may be reversed, especially in diverse countries such as Yugoslavia, Romania and Czechoslovakia.

CMEA: By continuing the Soviet economic "subsidy" to Eastern Europe through deliveries of oil and gas at world market prices and requiring moderate deliveries of machinery and consumer goods—the bilateral trade deficit—the perceived net outflow of resources from the U.S.S.R. to other parts of CMEA—may be reduced, although continued.

Western Commercial: By greater reliance on technology transfer from Western Europe and Japan, the East and South Europeans may—if hard currency earnings permit—stimulate domestic economic performance.

Although a return to the easy credit, cheap oil environment of the 1970's is unlikely, an increase in commercial relations with the West and in the availability of new Western credits are quite possible. New credits would likely follow Western financing and sales. Export financing by European governments and banks may follow corporations interested in keeping and expanding Eastern markets. Trade promotion from the West may also foster non-conventional forms of East-West cooperation: countertrade, industrial cooperation, "buy-back" arrangements.

Some benefits may be gained from increased trade within the CMEA through the integration of industries, such as computers, and by joint projects, such as pipeline construction. Although such developments in intra-CMEA trade may tend to favor the Soviets, for they may receive more valuable machinery and consumer goods for their oil and gas, the benefits of expanded trade may still be positive for all Eastern participants. The Soviet desire for the CMEA-Six to produce more hard goods may, paradoxically, increase shared interest in expanded Western trade in high technology.

I. EAST EUROPEAN TRADE

OVERVIEW

By George Holliday *

In the 1980s, East European trade policymakers are facing two crucial issues in foreign trade. The first is how to secure sufficient supplies of energy for their domestic economies, most of which depend a great deal on foreign energy supplies. The second is how to pay for foreign machinery, equipment, and technology needed for the modernization of domestic industries. Although East European officials have already worked with both issues, their past approaches have been ineffective and even irrelevant to the international economic environment of the 1980s. New constraints on East European trade policies may require modification of past policies and a different ordering of trade priorities.

The Soviet Union's willingness or ability to continue to expand exports of oil and natural gas to Eastern Europe and the ability of the East European countries to pay for increases are the most important variables in the energy problem. According to James L. Ellis, the volume of Soviet exports of oil to Eastern Europe doubled and the volume of gas grew ten-fold during the 1970s. Mineral imports accounted for 40 percent of total East European imports from the Soviet Union at the end of the decade. Moreover, Eastern Europe faced the same escalation of energy prices (though prices increased more slowly) that Western industrial countries experienced. The prices they paid for Soviet oil and gas imports tripled between 1975 and 1980. Thus, imports from the Soviet Union provided a solution (albeit a painful one) to Eastern Europe's energy needs in the 1970s.

Continued reliance on the Soviet Union for energy supplies is constrained both by a prospective slowdown (or, according to some observers, a decline) in Soviet oil production and by difficulties among the East European countries in paying for Soviet oil. While forecasts of future Soviet oil production vary widely, most observers believe that rising domestic consumption and the need to export to the West (oil is the primary Soviet earner of hard currency) will make it difficult to continue increasing exports to Eastern Europe. Although, as Ellis points out, increased imports of natural gas from the Soviet Union may partially compensate for shortfalls in oil deliveries, it seems likely that the Soviet Union will supply a smaller percentage of total East European energy needs in the future. Indeed, East European countries are already beginning to

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import increasing amounts of oil from oil-producing less developed countries.

The second constraint on relying heavily on imports of Soviet energy supplies is a payments problem. To pay the rapidly escalating bill for Soviet oil and gas, the East European countries must divert an increasing share of their exports away from the West and toward the Soviet Union. Ellis concludes that such a diversion is likely; East European trade, he says, will almost inevitably become more oriented toward the USSR.

Such a solution to Eastern Europe's energy problem, however, impinges on its ability to solve a second major foreign trade issue—how to pay for imports of machinery, equipment, and technology needed to modernize domestic industries. Between the late 1960s and mid-1970s, an increasing share of such imports came from the Western industrial countries. During that period, most of the East European countries followed a strategy of increasing rapidly their imports of Western technology to assist modernization of domestic industries. To facilitate such imports, East European governments drew heavily on credits from Western official and private financial institutions. They planned to repay the credits to the West by exporting goods produced by new and modernized plants. In some cases, East European negotiators conditioned their purchases of Western technology on specific countertrade requirements. That is, a condition of some contracts was an obligation by the Western firm to take payment partially in the products produced by the East European project that received the Western technology. In many other cases, East European officials simply used imported technology to build new exported-oriented enterprises which they thought would be able to compete on Western markets.

The new East European trade strategy resulted in a rapid increase in imports of Western technology. John A. Martens' data on Western exports of high technology products to Eastern Europe shows a more than five-fold increase in such exports during the 1970s. To some extent, imports of high-technology products from the West replaced imports of machinery from the Soviet Union that declined during the mid-1970s. The most important items among high-technology imports from the West were machine tools and control instruments, reflecting, as Martens points out, East European efforts to mechanize and automate production processes.

For a number of reasons, the East European trade strategy did not work as well as planned. Kasimierz Poznanski, who compares the East European strategy with similar strategies pursued by the newly industrializing countries, explains some of the shortcomings of East European efforts to assimilate new technologies and compete on Western markets. At the root of East European problems, according to Poznanski, are the bureaucratic foreign trade systems, which, despite some minor adjustments, have retained formidable barriers to effective assimilation of foreign technologies and export competitiveness. Among the features that have inhibited the new trade strategies, he says, are the complete state monopoly in trade, inconvertible currencies, multiple exchange rates, and discouragement of direct foreign investment. Posnanski contrasts the retention of such policies and institutions in Eastern Europe with the "radical reforms" of the foreign trade systems of many newly industrializing countries in Asia and Latin America.

Poznanski concludes that one of the consequences of differences in policies and institutions between the two groups of countries is a steady erosion of East European competitiveness in Western markets for manufactured goods, and a corresponding improvement in the position of the newly industrializing countries. His statistical analysis suggests that the latter countries have already surpassed Eastern Europe as exporters of steel, ships, and passengers cars to Western markets. Moreover, he finds some evidence that the newly industrializing countries may soon surpass the East European level of technology in computers, complex chemicals, aircraft, and other advanced products.

Poznanski's findings on the barriers to effective assimilation of Western technology and export competitiveness among the East European countries conform with the findings of other studies. Zbigniew Fallenbuchl, for example, has described in detail problems of assimilating Western technology in Poland in the 1970s.[1] In some cases, lack of knowledge of technological developments in the West and poor planning of technology purchases led to poor choices of foreign technologies. Delays in construction and installation of machinery led to late start-ups of plants using imported technology. Inexperienced managers, technical personnel and workers, and inadequate supplies from complementary domestic industries caused inefficient operation of new plants. In many cases, such problems, combined with a general unfamiliarity with foreign markets, created problems in meeting export goals. A number of case studies of Western technology transfer to individual projects in Eastern Europe and the Soviet Union have found a similar pattern of difficulties in assimilating Western technology and producing goods that are competitive on Western markets.[2]

Problems in assimilating new technologies and competing on Western markets, exacerbated by a severe recession in the West, made it difficult for the East European countries to expand exports to the West to the extent that they had planned. Balance of trade difficulties and high interest rates have produced serious debt burdens for some East European countries and a general reluctance by Western creditors to extend new credits. While the need to import Western machinery and equipment remains, Eastern European countries have been forced to reduce sharply their imports from the West. Martens' statistics on Western exports of high-technology products to Eastern Europe show a sharp decline in the 1980s. One consequence of the cut-back in imports from the West, according to Ellis, is that the Soviet Union has regained its importance as a supplier of machinery to Eastern Europe. Since Soviet machinery is often technologically inferior to Western machinery, however, it is a poor second choice.

Does expanded trade with developing countries offer a solution to East European trade problems? Several of the articles in this section suggest that East European trade officials have sought to develop trade ties with developing countries partially to compensate for constraints on energy imports from the Soviet Union and hard currency earnings in the Western industrial markets. Marie Lavigne emphasizes two important East European goals in promoting trade with developing countries: to develop alternative sources of raw materials, especially energy, and to earn hard currency to compensate for deficits with the industrial West. The East European countries have been moderately successful in achieving their goals: imports of energy have assumed a growing share of their imports from developing countries, and they have earned growing hard currency surpluses in their trade with developing countries.

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[1] Fallenbuchl, Zbigniew. "East-West Technology Transfer, Study of Poland, 1971-1980," Paris, Organisation for Economic Co-operation and Development, 1983, pp. 78-87.

[2] These case studies are surveyed in George D. Holliday, "Survey of Sectoral Case Studies," in Organisation for Economic Co-operation and Development, East-West Technology Transfer, Paris, 1984.

Gerard Ballot and Patrick Gutman conclude that tripartite (East-West-South) industrial cooperation is helping the East European partners solve their major trade problems. Tripartite industrial cooperation typically involves cooperation between an East European country and a Western firm in building factories or other projects in a developing country. Such arrangements help the Eastern partner to penetrate the markets of pro-Western developing countries, expand its exports of capital goods to those markets, gain access to Western export financing, and acquire new Western technologies. For the Western partner, Ballot and Gutman say, tripartite arrangements are an effective marketing technique. By using less expensive East European inputs they can submit lower bids for projects in developing countries. They caution, however, that the interests of individual Western firms may not always correspond with the long-term strategic and economic interests of Western governments. Ballot and Gutman document 255 tripartite arrangements since 1965 and conclude that they are becoming increasingly popular among the East European countries.

It is likely that East European economic planners consider their trade with developing countries as only a small part of the solution of their major trade problems. While trade with the developing countries has grown, it is still a small part of their overall trade. According to Ellis, the developing countries' share in total East European exports rose from 8 percent in 1970 to 11 percent in 1980; total East European imports remained in the 6 to 8 percent range. Despite growing imports of energy from developing countries, the Soviet Union has continued to supply the bulk of East European needs. And, although hard currency surpluses with developing countries have grown, Lavigne cautions that they may be smaller than they appear, because some payments between the two groups are not made in hard currency.

To some extent, the trade problems confronted by East European policymakers are due to conditions beyond their control: the world recession, high interest rates, and rapid escalation of oil prices are examples. Several of the authors in this section maintain, however, that East European trade problems also have origins that are peculiar to the highly centralized economic systems of those countries. They emphasize that economic reform is an important ingredient of any permanent solution to East European trade problems. Keith Crane, for example, contrasts foreign trade decisionmaking in Hungary and Poland, and concludes that important systemic differences between the two countries account for Hungarian success and Polish failure in dealing with critical hard currency balance of payments problems.[3] He finds the emphasis on profits in Hungarian firms, combined with a price system that was designed to reflect price ratios on the world market, encouraged enterprise managers to make decisions in accordance with comparative advantage. The Hungarian system gave enterprises effective incentives to substitute domestic inputs for costlier hard currency imports and to increase production of exports that were competitive on Western markets. The Polish system, on the other hand, provided weak incentives for making decisions on the basis of comparative advantage.

An implication of Crane's comparison of the Hungarian and Polish systems is that economic reform could contribute significantly to the ability of Eastern European countries to adjust efficiently to external disequilibrium. The kind of reform Crane describes, however, is fundamental to centrally planned economies. Most of the East European countries have shown some willingness to experiment with such minor foreign trade reforms as provisions for protection of proprietary technologies, limited participation by foreign firms in domestic joint ventures, and retention of hard currency earnings by domestic firms that meet export goals. Most have not, however, shown an inclination to reform fundamentally domestic price systems. They have, in Poznanski's words, "left the core of the bureaucratic system unchanged." An important question for East European policymakers in the 1980s is whether more fundamental reform is necessary to deal with pressing foreign trade problems.

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[3] See Keith Crane "Foreign Trade Decisionmaking Under Balance of Payments Pressure: Poland Versus Hungary" in vol. III.

EASTERN EUROPE: CHANGING TRADE PATTERNS AND PERSPECTIVES

By James L. Ellis [*]

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I. SUMMARY

Examining changes in East European trade shares with various areas of the world in the 1970's, one notes the strong impact on East European trade patterns of higher-priced Soviet oil and gas, and the less pronounced effects of imports of Western industrial machinery. At the same time, one discovers that the East European countries restricted growth of non-energy imports from the USSR, and of most categories of imports from one another.

Having vastly expanded purchases of Western capital equipment in the early 'seventies, Eastern Europe also cut back sharply on these imports in the latter 'seventies as a result of higher prices, dwindling credit availability, and difficulties in using the equipment effectively. Eastern Europe apparently did modernize its productive capacity sufficiently, however, to remain competitive in Western markets in many manufactured items.

Trade with lesser-developed countries became more important to Eastern Europe in the 1970's, providing some increased means for offsetting trade imbalances with other areas of the world. Most export growth occurred through increased shipments of agricultural products and raw materials rather than manufactures, Eastern Europe's prime export to the area.

On the basis of past trends, it seems that energy requirements will be a stronger determinant of East European trade patterns over the rest of the 1980's than will purchases of Western industrial machinery. East European import interests from the West are likely to be concentrated in labor- and energy-saving equipment. Lesser-developed countries may play an increasingly important role in East European trade, both as markets and as participants in three-way arrangements with Western industrial nations. There should be continuing, though fewer, opportunities for Western firms to sell products for specific industries targeted for modernization and expansion.

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[*] Office of U.S.S.R. and Eastern Europe, International Trade Administration, U.S. Department of Commerce. The views expressed in this paper are solely those of the author, and should not be construed as a statement of U.S. Department of Commerce policy.

II. INTRODUCTION

Characterized in the 1960's by overwhelming orientation toward the Soviet Union, the pattern of East European[1] trade in the 1970's was dominated by the effects of the oil price explosion, detente, and rapidly accumulated hard-currency debt. East European trade in the 1980's will continue to be influenced by the after-effects of the developments of the 1970's, but will also be shaped by the imperative of domestic economic growth.

Avoiding conjecture about political events which may affect the course of East European foreign trade in the 1980's, this paper analyzes trade developments in the 1970's which will most likely continue to influence the area, as well as changing requirements in the East European economies which will have a bearing on trade. It assumes that the functioning of the East European economic systems will remain basically unchanged—that there will be no widespread reforms which will radically affect production, currency controls, and the effect of trade prices on domestic enterprises.[2] It also takes the view that the East European nations will seek to increase growth of output wherever possible to improve economic performance, and that expanded trade will remain vital to growth.

This paper does not examine the effects of hard-currency debt repayment on East European trade, which in the first years of the 1980's has led to reduced imports from the West, with corresponding limitations on export capabilities.[3] It does take this phenomenon into account, however, in its assessment of probable future East European trade trends.

III. PAST PATTERNS

United Nations data make it possible to examine the directions and composition of East European trade during the 1970's by major country groupings.[4] The data is reported in Tables 1 through 14 ap-

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[1] "Eastern Europe" in this paper refers to: Bulgaria, Czechoslovakia, the German Democratic Republic (GDR), Hungary, Poland, and Romania.

[2] Hungary has already effected reforms which cause enterprises readily to feel the effects of changes in world prices; even in Hungary, however, a number of controls remain to protect Hungarian enterprises and the economy from sudden fluctuations in world prices.

[3] A preliminary survey of the effects of East European hard-currency debt on East-West trade has been made by Dr. Allen Lenz, among others, of the US Department of Commerce's International Trade Administration in a paper entitled "Controlling International Debt: Implications for East-West Trade."

[4] International Trade Statistics, 1980, Vol. I, Special Table C. The cited data are taken from trade matrices which utilize export data only. What is shown in the tables in this paper as East European imports from the Industrial West and the Developing World are thus the latter areas' exports to Eastern Europe, f.a.s., as reported by individual Western and developing countries. What is indicated in the tables as East European imports from the developing countries are probably understated, because of considerable statistical omissions by these countries. East Eu-

Continued

pended to this paper. Trade statistics based on aggregate values alone hide commodity price movements and so mask changes in the terms of trade. East European trade statistics are also clouded by official exchange rates, which are usually exaggerated with respect to Western currencies, and may also tend to understate the market value of trade with the Soviet Union. Nonetheless, if these aggregate values are considered as shares of total exports and imports over time, they serve to indicate areas of decreased or improved competitiveness for different commodity categories, and so point to past adverse trends and future trade potential. Eastern Europe's export and import shares for 1970–80 with major trading partner groups are listed in Tabulations A and B adjacent, and show the changing importance of commodities traded with various supplier groups and export markets.

1. Soviet-East European Trade

East European imports from the USSR during the 1970's are dominated by a ten-fold increase in outlays for mineral fuels. Whereas energy materials accounted for some 15 percent of East European imports from the USSR in 1970, by the end of the 'seventies they had grown to 40 percent. Part of the increase was due to expanded delivery volumes of Soviet oil, which nearly doubled, and natural gas, which grew about ten-fold; but Eastern Europe also had to pay more for the oil and gas it imported, particularly after 1975. Between 1975 and 1980, the price of both Soviet oil and gas delivered to Eastern Europe approximately tripled.

Eastern Europe was thus, early on, subject to the effects of the world oil price explosion, which by 1983, through the automatic price-setting mechanism in the CMEA,[5] had pulled the price of Soviet oil delivered to Eastern Europe nearly up to Western market levels. This development gave rise to a strong deterioration in Eastern Europe's terms of trade with the Soviet Union, as well as to East European appeals to the USSR for compensating intra-CMEA trade adjustments, but to little avail. Another effect of increased Soviet oil prices in the 1970's was that the East European

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ropean export data, on the other hand, are assumed to be relatively accurate and complete. For example, a comparison of East European exports to the United States, as given in the UN Table C, and US import data for the respective years, shows a close correspondence in values. A significant distortion might arise in East European export data with respect to exports to the Soviet Union, because of an artificially high exchange rate which is probably used in converting this trade, largely denominated in so-called transferable rubles, into US dollars. This potential overvaluation is probably balanced to some extent, however, by prices assigned to CMEA-traded goods, which are frequently lower than those prevailing on world markets.

Any tabulation of East European trade is distorted by statistical problems, chief among them being difficulties in arriving at realistic exchange rates, differing methods of accounting, and lags in data collection, all of which are dealt with at length by Paul Marer in an article entitled "Toward a Solution of the Mirror Statistics Puzzle in East-West Commerce" in International Economics: Comparisons and Interdependence (F. Levcki, ed., Springer, Vienna/New York, 1978). It is assumed that some of these problems are avoided by using UN data, which is subject to cross-checking of different member countries' trade data submissions, and to presumably uniform statistical treatment. Moreover, many statistical discrepancies become relatively minor in reference to the large country and product groupings discussed in this paper, which seeks simply to show changes in East European export and import product structure to various areas over the past decade. Most of these statistical problems, therefore, probably do not significantly affect the paper's conclusions.

[5] The Council for Mutual Economic Assistance, currently comprising Eastern Europe, the USSR, Cuba, Mongolia, and Vietnam. Where the term "CMEA" is used in this paper, it is meant to refer only to the USSR and Eastern Europe, and to exclude the other member countries.

nations began to buy more energy materials from the oil-exporting lesser-developed countries (LDC's): Imports of energy materials from LDC's increased from less than 0.5 percent of total East European imports in 1970 to over 3 percent by 1980.

TABULATION A.—DISTRIBUTION OF EAST EUROPEAN IMPORTS BY AREA AND SITC PRODUCT CATEGORY, SELECTED YEARS, 1970–80

[Percent of total imports] [1]

Area/category	1970	1975	1979	1980
World	100.00	100.00	100.00	100.00
0–1: Food, beverages, tobacco	10.54	7.91	8.92	9.48
2/4: Crude materials	13.06	10.12	10.06	10.06
3: Mineral fuels	8.41	13.27	19.13	21.26
5: Chemicals	5.99	6.72	6.74	6.96
7: Machinery, transport equipment	30.18	32.48	30.37	28.87
6/8: Other manufactures	25.77	25.25	21.49	20.28
Industrial West	23.66	30.43	28.26	27.24
0–1: Food, beverages, tobacco	2.74	2.75	3.93	4.60
2/4: Crude materials	2.43	2.16	2.50	2.27
3: Mineral fuels	.48	.35	.58	.66
5: Chemicals	3.07	4.33	4.39	4.46
7: Machinery, transport equipment	7.33	10.62	8.44	7.57
6/8: Other manufactures	7.44	10.00	8.16	7.45
Lesser Developed Countries	6.46	7.26	6.79	8.01
0–1: Food, beverages, tobacco	2.71	2.04	1.99	2.25
2/4: Crude materials	2.43	2.00	1.49	1.62
3: Mineral fuels	.26	2.25	2.52	3.30
5: Chemicals	.13	.09	.07	.08
7: Machinery, transport equipment	.02	.04	.01	.02
6/8: Other manufactures	.87	.83	.68	.71
Eastern Europe	29.09	26.15	24.33	23.75
0–1: Food, beverages, tobacco	2.37	1.84	1.74	1.73
2/4: Crude materials	1.12	.58	.70	.71
3: Mineral fuels	1.75	1.47	1.41	1.25
5: Chemicals	1.84	1.59	1.40	1.45
7: Machinery, transport equipment	14.47	13.93	13.12	12.92
6/8: Other manufactures	7.29	6.54	5.71	5.43
Soviet Union	39.32	34.82	38.86	39.27
0–1: Food, beverages, tobacco	2.43	1.01	.89	.53
2/4: Crude materials	6.81	5.11	5.05	5.14
3: Mineral fuels	5.91	9.20	14.62	16.08
5: Chemicals	.91	.67	.83	.92
7: Machinery, transport equipment	8.31	7.85	8.75	8.31
6/8: Other manufactures	9.39	7.20	6.02	5.81
China/Communist Asia	1.45	1.35	1.76	1.72
0–1: Food, beverages, tobacco	.29	.28	.37	.36
2/4: Crude materials	.29	.26	.33	.32
3: Mineral fuels	.00	.00	.00	.00
5: Chemicals	.03	.05	.05	.05
7: Machinery, transport equipment	.05	.04	.05	.05
6/8: Other manufactures	.77	.68	.91	.89

[1] Subsidiary percentages do not add up to area totals, which include unidentified items.

Source: Tables 1–7.

TABULATION B: DISTRIBUTION OF EAST EUROPEAN EXPORTS BY AREA AND SITC PRODUCT CATEGORY, SELECTED YEARS, 1970–1980

[Percent of total exports][1]

Area/category	1970	1975	1979	1980
World	100.00	100.00	100.00	100.00
0–1: Food, beverages, tobacco	12.86	11.68	10.27	10.32
2/4: Crude materials	5.74	4.26	4.29	4.41
3: Mineral fuels	5.30	7.84	7.54	8.10
5: Chemicals	6.91	7.37	7.00	7.64
7: Machinery, transport equipment	38.77	41.21	43.47	42.99
6/8: Other manufactures	29.51	26.70	26.47	25.93
Industrial West	24.34	24.11	26.58	26.26
0–1: Food, beverages, tobacco	5.60	4.19	3.69	3.36
2/4: Crude materials	3.22	2.34	2.40	2.32
3: Mineral fuels	2.31	4.39	4.91	5.56
5: Chemicals	1.69	1.90	2.10	2.36
7: Machinery, transport equipment	2.75	3.73	3.89	3.68
6/8: Other manufactures	8.58	7.48	9.37	8.82
Lesser Developed Countries	7.59	9.23	10.01	11.29
0–1: Food, beverages, tobacco	.74	1.22	1.40	1.60
2/4: Crude materials	.25	.30	.41	.46
3: Mineral fuels	.18	.31	.28	.27
5: Chemicals	.71	1.04	1.10	1.31
7: Machinery, transport equipment	3.31	3.73	3.89	4.42
6/8: Other manufactures	2.35	2.56	2.89	3.18
Eastern Europe	28.21	28.04	25.33	24.77
0–1: Food, beverages, tobacco	2.30	1.97	1.81	1.81
2/4: Crude materials	1.08	.62	.73	.74
3: Mineral fuels	1.70	1.58	1.46	1.30
5: Chemicals	1.79	1.70	1.46	1.51
7: Machinery, transport equipment	14.03	14.94	13.67	13.47
6/8: Other manufactures	7.07	7.02	5.95	5.66
Soviet Union	37.40	35.35	35.17	34.24
0–1: Food, beverages, tobacco	3.99	4.00	3.23	3.39
2/4: Crude materials	.97	.68	.53	.57
3: Mineral fuels	.98	1.29	.77	.59
5: Chemicals	2.58	2.44	2.05	2.15
7: Machinery, transport equipment	17.63	17.66	20.56	19.75
6/8: Other manufactures	10.92	8.87	7.78	7.66
China/Communist Asia	2.17	1.96	2.25	2.21
0–1: Food, beverages, tobacco	.11	.10	.12	.14
2/4: Crude materials	.22	.18	.23	.25
3: Mineral fuels	.14	.12	.11	.12
5: Chemicals	.14	.25	.28	.31
7: Machinery, transport equipment	1.02	.83	1.03	.91
6/8: Other manufactures	.52	.47	.44	.45

[1] Subsidiary percentages do not add up to area totals, which include unidentified items.

Source: Tables 8–14.

As imports of energy materials from the USSR increased in importance for Eastern Europe, other import categories from the Soviet Union declined as a share of total East European imports. Most notable were the falls in the shares of manufactures other than machinery and transport equipment, and of non-fuel raw materials. The relative declines show that Eastern Europe continued to depend on the Soviet Union to keep its industry running, albeit with reduced raw materials inputs, at the expense of items which might have contributed more directly to its standard of living.

Toward the middle of the decade, East European purchases of Soviet machinery also declined as a share of total East European imports, as Eastern Europe turned increasingly to the West for such items; but by the end of the decade the USSR had regained its importance as a machinery supplier. Growth in the value of Soviet machinery and energy exports caused the USSR by 1979 to provide the same share of East European imports that it had at the beginning of the decade. Overall, the USSR supplied 39 percent of Eastern Europe's import needs, by value, at the beginning of the decade; dropped to a low of 30 percent in 1974, then climbed steadily back to a 39-percent level by 1980.

East European export shares to the USSR over the 1970's, on the other hand, show a general decline in all categories except machinery and transport equipment. The increase in the share of machinery toward the end of the decade underlines Eastern Europe's response to higher Soviet oil prices, and raises the question of how much machinery exported to the USSR might otherwise have been sold on Western markets.

Despite the decline in export shares of food and raw materials shipped to the USSR, Eastern Europe sold increasing quantities of raw materials to the Soviet Union as a result of higher Soviet oil prices. To compensate for declining terms of trade with the Soviet Union, the East European countries shipped increasing quantities of ores and metals, timber, and textiles to the USSR throughout the 1970's.[6]

2. *Intra-East European Trade and Integration*

Over the decade, intra-East European trade as a portion of Eastern Europe's total trade declined from nearly 30 percent to around 25 percent. The decline was accounted for almost entirely by slight falls in the shares of food, raw materials, and non-machinery manufactures. The share of these categories may have declined partly as a result of price changes: the intra-CMEA prices of these commodities probably tended to deteriorate relative to prices for such categories as machinery and chemicals; but as for food, it is likely that decreasing quantities were traded owing to a number of bad harvests.

A proliferation of specialized production and trade arrangements in the seventies among the East European countries does not appear to have led to a corresponding expansion of trade. Undoubtedly, the agreements tended to formalize trading relationships, but there is no evidence that they had any noticeable impact on intra-East European trade, which in any case continued to be constrained by strong nationalistic forces to preserve economic autarky.

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[6] See Thomas A. Wolf, "Changes in the Pattern of Soviet Trade with the CMEA and the 'Non-Socialist' Countries", Table 6, in the collected papers of the 1983 NATO *Economics Colloquium*, Brussels, Belgium.

3. East-West Trade

The 1970's saw the Industrial West assume a greater proportion in the trade of most of the countries of Eastern Europe as they imported capital equipment on a vastly expanded scale to stimulate economic growth. Already relatively high for Romania in 1970, the share of the Industrial West in imports had grown noticeably by 1980 for Poland and Hungary, and also registered perceptible advances for the GDR and Bulgaria. Much of the heightened import activity was made possible by large extensions of credits by the West, since the East European countries, lacking exportable petroleum, were unable to generate enough export growth to the West to offset expanded imports. Romania alone was able to participate in the boom in crude oil prices to finance a substantial portion of its imports from the West; but by 1976 Romania's exportable oil surplus had ceased to exist, as a result of growing domestic demand and declining domestic production.

Eastern Europe's growth strategy of importing substantial amounts of Western capital equipment was cut short in the latter 1970's by the confluence of three main forces. One was the unfavorable development of Eastern Europe's terms of trade with the West: Prices of East European exports of machinery to the West lagged behind prices of imported machinery, pushed rapidly upward by oil-fueled inflation. Later in the decade, the East European countries reached the limits of their ability to borrow on Western capital markets, and bankers' reluctance to extend new loans became widespread with the onset of the Polish crisis. A third negative influence was the effect of the East European economic systems themselves—expensive imported equipment frequently lay idle or was used inefficiently, most often because of planning mis-coordination and the rigidities of centralized control.

As a result of these developments, East European planners sharply curtailed Western capital equipment imports. Thus, the larger share which imports of machinery and transport equipment from the West occupied in total East European imports in the mid-'seventies, had by the end of the decade fallen back to 1970 levels. Less affected by the negative tendencies were East European imports from the West of manufactures other than machinery and transport equipment, which continued to fill gaps in domestic production.

Imports of agricultural goods from the Industrial West grew noticeably toward the end of the decade, because of harvest shortfalls and perennial difficulties in expanding domestic production. Like the Soviet Union, Eastern Europe was beset by the problem of finding adequate feedstuffs to accommodate planned expansion of livestock herds and domestic meat supplies. Unlike the USSR, however, most of the nations of Eastern Europe started from a higher level of per capita meat consumption and so were relatively less dependent on increased agricultural imports for enhancing the diet of their populaces. Consequently, agricultural imports from the United States, Eastern Europe's largest supplier in the late 'seventies, showed marked cutbacks in the period of general East European import retrenchment evident after 1980.

Exports to the West in the seventies, on the other hand, showed perceptible increases in shares of total East European exports in the categories of mineral fuels (principally refined products), chemicals, and all types of manufactures. It is remarkable that East European exports of machinery and transport equipment grew somewhat as a share of total East European exports; evidently, Eastern Europe at least maintained its relative competitiveness in this category. To that extent, its strategy of updating its plants with imports of Western machinery succeeded.

The strong advance of East European exports of mineral fuels and chemicals to the West reflected a sizable build-up of petroleum-refining capacity, in Romania in particular, but also in the GDR, Czechoslovakia, and Hungary. Thus, although battered by rising crude oil prices, the East European nations took advantage of a concurrent rise in oil product prices to export some of their petroleum imports as refined products at considerable profits. At the same time, however, in significantly expanding their petroleum refining capacity, they made themselves vulnerable to fluctuations in feedstock pricing and availability.

Shipments of agricultural products, a traditional East European export to the West, declined during the 1970's as a share of total East European exports. The fall reflected national scarcities and a re-direction of some of this trade toward the LDC's, particularly the OPEC nations.[7]

4. LDC Trade

While the role played by the LDC's in East European trade is still smaller than it is in the trade of the Industrial West, commerce with the LDC's became more important to Eastern Europe in the 1970's.[8] The share of LDC's in total East European exports rose from 8 percent in 1970, to 11 percent in 1980, while the LDC share in East European imports held steady at 6–8 percent. Trade with the LDC's thus provided Eastern Europe with increased means for offsetting its trade imbalances with other areas of the world.

Strongest East European export growth occurred in agricultural products and raw materials; much of this increase was directed to the oil-exporting LDC's. East European exports of all types of manufactures, on the other hand, continued to account for the bulk of all East European deliveries to LDC's although their share in East European exports to the area declined from 74 percent in 1970 to 67 percent in 1980.

On the import side, LDC shipments to Eastern Europe held virtually constant shares of total East European imports throughout the 1970's, with the exception of oil deliveries. As early as 1975, oil imports from LDC's had assumed a share of some 35 percent in total East European imports from the area. Outside of this shift, however, the picture which emerges is that Eastern Europe was able to maintain a relative price advantage in its trade with LDC's, assuming that the quantities of commodities traded other than oil did not change radically.

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[7] See Ronald G. Oechsler and John A. Martens, "East European Trade with OPEC: A Solution to Emerging Energy Problems?", in East European *Economic Assessment,* Part 2 (Joint Economic Committee of the US Congress, 10 July 1981).

[8] For a fuller discussion, see James L. Ellis, "Eastern and Western Trade with LDC's: Trends and Prospects" in the collected papers of the 1983 NATO *Economics Colloquium,* Brussels, Belgium.

IV. FUTURE POSSIBILITIES

East European trade with various areas of the world in the rest of the 1980's will undoubtedly follow many of the trends which developed in the 1970's, reflecting East European governments' continuing attempts to deal with long-term constraints on economic growth. Certainly, energy considerations will loom large in East European trade orientations. Soviet oil deliveries will remain a sizable, although probably declining, component of East European imports. To whatever extent the USSR diminishes oil exports to Eastern Europe, recent trade trends and rapidly growing Soviet gas production suggest that the USSR will further expand deliveries of natural gas, although at prices probably closely corresponding to world levels. Energy imports from the Soviet Union will thus not decline in importance for Eastern Europe, and will have a strong influence on other East European trade possibilities.

Deliveries of Western machinery to Eastern Europe, on the other hand, will probably not regain the market share they had in the mid-'seventies, because of the persistence of the barriers to borrowing and buying in the West which arose toward the end of the past decade. Eastern Europe will continue to seek Western technology deemed essential to economic growth, but will keep such purchases to a minimum in view of hard-currency constraints.

Another reason why Western manufactures will probably not regain their former prominence in East European imports derives from Eastern Europe's observed tendency to export more machinery and equipment to the Soviet Union to pay for higher-priced energy imports. With Eastern Europe's machinery production once again more oriented to the Soviet market, there will be less motivation to modernize it with Western equipment. With more machinery and equipment being CMEA-built, additional spare parts will also be manufactured and supplied in the CMEA, thus reinforcing intra-CMEA trade in machinery still further.

Eastern Europe will doubtless continue to import some Western machinery and equipment to keep its own machinery production industries competitive on Western and LDC markets, to the extent possible. But lacking either the will or the means to engage in borrowing in the West on past scales, it will be unable to renew its industry in the 1980's to the extent attempted, with only modest success, in the 'seventies. Eastern Europe will thus be less able to sustain economic growth through general industrial expansion and renovation; instead, it will have to concentrate on the development of specific, narrow industrial sectors, and expansion of service sectors.

As for other East European potential import trends, purchases of agricultural goods from the West may show some bouyancy, depending on East European recovery from its hard-currency financial constraints. In addition, LDC resources might be further developed and utilized with East European assistance and countertrade to provide alternative sources of raw materials, although the USSR will remain Eastern Europe's principal supplier.

On the export side, past East European trade patterns show potential for expanding deliveries of refined chemicals and petrochemicals and a range of machinery and manufactures to both LDC's and the Industrial West. This potential may prove to be especially important in obtaining vital raw materials and in earning convertible currencies. As indicated, part of this potential will be offset, however, by increased exports of machinery and equipment to the USSR to pay for higher-priced energy supplies and to participate in joint energy development projects on Soviet soil. To cut their losses from the export of such potential hard-currency exports to the USSR, the East European nations might widely try to obtain higher prices for "new" machinery products delivered to the Soviet Union.

Beyond such general trends, one can analyze likely future East European imports from the West, and areas offering greatest potential for expanded exports, on the basis of observations regarding domestic output. Eastern Europe's primary import needs for increased domestic production can be specified as products and capital goods which are labor-saving or promote conservation of raw materials and energy.

1. Import Needs From West

Even under its current highly redundant standards of work organization, Eastern Europe experiences widespread shortages of properly trained labor. To meet the problem of limited labor supplies, it is compelled to seek labor-saving devices and ideas both at home and abroad. An important source of such devices and ideas will doubtless continue to be the Industrial West.

Eastern Europe will also undoubtedly continue to seek capital equipment from the West, although, as already noted, probably not on the scale of the 'seventies. As in the past, the type of equipment sought will be that which promises to reduce input requirements or raise the value of output significantly.

In addition to seeking specific capital equipment as a means to increase economic growth, planners will surely give more attention to services as a component of growth in their economies, just as services have become a basis for growth in the West. To some extent, the East European nations will continue to seek capital equipment which can substitute for services, such as computers and electronics. Alternatively, they may be increasingly attracted to importing Western service techniques, through licenses and service contracts.

Having come near the limits of their ability to finance imports of capital equipment from the West, the East European countries can be expected to insist increasingly on cooperation arrangements and countertrade transactions. To the extent that LDC's are usually more willing than Western industrial nations to engage in such transactions, the East European countries may increasingly seek to conclude them with LDC's, as a means to obtaining LDC products, which can in part be re-exported to the West for desired capital equipment and services.

2. Potential Exports to West

To pay for its imports from the West in the 1980's Eastern Europe will probably have greatest export potential in the areas of industrial goods, chemicals, and other manufactures, in line with past trends. Eastern Europe's primary means of competing in the West with its industrial goods will be through lower prices, since East European industrial output shows little indication of overcoming its technological lags. Certain countries of Eastern Europe may try to build on their specialized experience in specific industrial sectors to complement output of Western industries.

In more traditional industrial areas, such as machine tools, Eastern Europe's primary market will probably be the CMEA area, although dynamic demand might develop in some LDC's in connection with industrial cooperation arrangements. LDC's could grow in significance in connection with exports of manufactures and processed foods from Eastern Europe, especially where countertrade transactions can be arranged.

Just as Eastern Europe may import more services from the West in the 1980's, it also has the potential to export a variety of services to a potentially growing number of clients. LDC's may become prime targets for East European construction project design, because of East European experience with projects suited to LDC needs and probably lower component costs. GDR-Polish shipping, on the other hand, will probably remain competitive in most parts of the world, in conjunction with Soviet cargo services.

V. CONCLUSIONS

Eastern Europe's trading patterns in the 1980's will be determined by efforts to overcome trade obstacles encountered in the 1970's, growing domestic production needs, and changing export potential. As a result, East European trade will almost inevitably become more oriented toward the USSR; but at the same time, Eastern Europe could become a more important competitor in LDC markets in certain product categories. In terms of the West's total trade volume, this potential competition will remain relatively insignificant; its most tangible result might be a marginal increase in Eastern economic influence in some LDC's. At the same time, Eastern Europe could expand the share of its exports to Western markets; but it will probably not increase the relative volume of imports from the West. There will be continuing opportunities, however, for Western firms to sell products for specific industries targeted for modernization and expansion.

TABLE 1.—EAST EUROPEAN IMPORTS, 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	17,186	18,823	22,265	29,849	38,317	47,246	50,323	55,962	64,438	72,861	82,042
Industrial West [1] [2]	4,066	4,699	5,983	8,843	12,850	14,378	14,630	14,809	17,504	20,589	22,347
EEC [1] [3]	2,395	2,831	3,652	5,355	7,735	8,416	8,231	8,399	9,937	11,451	12,278
United States	233	220	275	605	821	946	1,190	912	1,421	2,066	2,340
Japan	107	158	232	325	573	574	549	736	697	808	807
Communist areas [4]	12,008	13,005	14,877	19,223	22,385	29,438	31,668	36,833	42,743	47,323	53,123
U.S.S.R.	6,758	7,241	7,841	9.828	11,504	16,449	17,385	20,731	24,808	28,314	32,221
Eastern Europe	5,000	5,511	6,760	8,983	10,343	12,352	13,544	15,187	16,728	17,727	19,487
China/Communist Asia	250	253	276	412	538	637	739	915	1,207	1,282	1,415
LDC's [5]	1,110	1,130	1,405	1,783	3,082	3,430	4,024	4,319	4,190	4,950	6,571
OPEC [6]	111	161	269	329	803	1,140	1,527	1,442	1,585	2,023	2,822
Other Africa [7]	292	298	428	495	848	1,008	921	845	927	1,194	1,666
Other South America	403	387	419	627	984	927	1,187	1,565	1,236	1,576	1,791

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "U.N. Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai) and Venezuela.
[7] Excluding Zimbabwe.

Source: "UN Yearbook of International Trade Statistics, 1980," pp. 1089–93 (vol. I); 1981, pp. 1119–23 (vol. I).

TABLE 2.—EAST EUROPEAN IMPORTS OF FOOD, BEVERAGES, AND TOBACCO (SITC, REV. 0–1), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	1,811	2,059	2,061	2,856	3,776	3,739	4,319	4,852	5,175	6,501	7,775
Industrial West [1] [2]	471	594	689	1,080	1,164	1,299	1,804	1,380	2,025	2,863	3,770
EEC [1] [3]	228	265	341	458	435	350	431	389	583	813	1,324
United States	74	115	104	341	352	467	732	394	762	1,277	1,539
Japan	1	0	1	1	1	1	1	1	1	1	1
Communist areas [4]	875	1,017	835	1,032	1,495	1,476	1,286	1,806	1,758	2,187	2,128
U.S.S.R.	418	524	302	342	492	475	147	524	308	648	437
Eastern Europe	407	446	480	632	877	869	985	1,087	1,193	1,268	1,420
China/Communist Asia	50	47	53	56	126	132	154	195	257	271	299
LDC's [5]	465	447	538	744	1,116	963	1,230	1,666	1,392	1,451	1,850
OPEC [6]	30	40	39	53	68	56	66	93	126	119	304
Other Africa [7]	64	69	83	133	172	166	172	247	198	106	326
Other South America	287	271	308	445	746	624	826	1,213	1,912	1,094	1,163

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai) and Venezuela.
[7] Excluding Zimbabwe.

Source: "UN Yearbook of International Trade Statistics, 1980," pp. 1095–99 (Vol. I); 1981, pp. 1125–29 (Vol. I).

TABLE 3.—EAST EUROPEAN IMPORTS OF CRUDE MATERIALS, EXCLUDING FUELS, OILS, AND FATS (SITC, REV., 2/4), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	2,245	2,245	2,515	3,257	3,973	4,782	4,602	5,556	5,848	7,331	8,251
Industrial West [1] [2]	417	414	556	859	1,088	1,021	1,097	1,204	1,367	1,821	1,859
EEC [1] [3]	133	137	175	261	348	297	315	355	394	496	579
United States	72	54	97	151	177	152	190	194	265	415	346
Japan	11	11	7	8	28	23	15	23	30	36	40
Communist areas [4]	1,412	1,417	1,576	1,882	2,000	2,814	2,602	3,485	3,575	4,426	5,061
U.S.S.R.	1,170	1,150	1,274	1,535	1,657	2,415	2,166	2,921	2,908	3,677	4,215
Eastern Europe	192	216	214	240	242	274	288	388	443	509	580
China/Communist Asia	50	51	58	107	101	125	148	176	224	240	266
LDC's [5]	417	414	413	515	885	947	902	868	906	1,085	1,331
OPEC (6)	40	43	38	41	69	60	98	59	64	67	94
Other Africa (7)	141	166	168	191	452	523	354	344	291	356	411
Other South America	101	96	74	120	141	160	185	206	174	274	376

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai) and Venezuela.
[7] Excluding Zimbabwe.

Source: "UN Yearbook of International Trade Statistics, 1980," pp. 1103–07 (vol. I); 1981, pp. 1133–39 (vol. I).

TABLE 4.—EAST EUROPEAN IMPORTS OF MINERAL FUELS AND RELATED MATERIALS (SITC, REV., 3), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World[1]	1,445	1,608	1,992	2,478	3,291	6,272	7,282	8,921	10,933	13,940	17,446
Industrial West[1] [2]	83	67	83	113	140	167	182	205	259	425	541
EEC[1] [3]	36	49	63	82	87	112	110	85	117	289	302
United States	29	5	2	6	7	18	11	56	36	46	89
Japan	0	0	0	0	0	1	1	1	2	4	56
Communist areas[4]	1,317	1,458	1,695	2,118	2,474	5,041	5,683	7,384	9,230	11,676	14,221
U.S.S.R.	1,016	1,167	1,395	1,766	2,015	4,345	4,908	6,541	8,315	10,650	13,196
Eastern Europe	301	291	301	352	459	696	775	843	914	1,025	1,024
China/Communist Asia	0	0	0	0	0	0	0	0	1	1	1
LDC's[5]	45	83	213	247	677	1,064	1,417	1,332	1,444	1,839	2,704
OPEC[6]	30	75	182	222	649	1,008	1,351	1,276	1,387	1,815	2,402
Other Africa[7]	21	14	102	107	135	216	315	174	349	630	863
Other South America	0	0	1	3	4	4	11	5	14	20	8

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.
[7] Excluding Zimbabwe.

Source: "UN Yearbook of International Trade Statistics, 1980," pp. 1125–29 (vol. I); 1981, pp. 1159–63 (vol. I).

TABLE 5.—EAST EUROPEAN IMPORTS OF CHEMICALS (SITC, REV., 5), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	1,030	1,150	1,349	1,878	3,033	3,175	3,279	3,555	4,159	4,914	5,710
Industrial West [1] [2]	527	608	777	1,113	2,111	2,045	2,055	2,213	2,633	3,202	3,663
EEC [1] [3]	348	400	518	765	1,439	1,346	1,405	1,532	1,841	2,256	2,543
United States	12	10	12	13	26	40	41	38	33	67	58
Japan	13	14	22	26	77	51	53	63	61	77	90
Communist areas [4]	479	517	546	742	876	1,089	1,196	1,312	1,491	1,660	1,980
U.S.S.R.	157	166	182	214	253	318	314	373	475	604	752
Eastern Europe	317	347	362	520	609	749	857	914	982	1,019	1,188
China/Communist Asia	5	4	2	8	14	22	25	25	34	37	40
LDC's [5]	23	25	26	24	46	41	29	29	36	52	66
OPEC	1	1	0	0	1	1	0	1	0	3	5
Other Africa [6]	14	17	14	11	16	14	7	8	12	17	22
Other South America	7	5	6	3	12	12	11	9	6	19	24

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Excluding Zimbabwe.

Source: U.N. Yearbook of International Trade Statistics, 1980, pp. 1129–33 (vol. I); 1981, pp. 1163–69 (vol. I).

TABLE 6.—EAST EUROPEAN IMPORTS OF MACHINERY AND TRANSPORT EQUIPMENT (SITC, REV., 7), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World[1]	5,186	6,015	7,486	10,449	12,574	15,345	16,292	18,430	21,260	22,125	23,682
Industrial West[1] [2]	1,259	1,500	2,026	2,868	3,879	5,015	4,772	5,184	6,040	6,146	6,213
EEC[1] [3]	879	1,039	1,415	1,940	2,548	3,284	3,160	3,233	3,799	3,894	3,825
United States	24	26	41	66	199	220	158	180	268	198	222
Japan	23	53	103	165	192	277	236	412	380	395	330
Communist areas[4]	3,924	4,508	5,449	7,564	8,686	9,312	11,503	13,235	15,211	15,970	17,455
U.S.S.R.	1,428	1,669	2,055	2,723	3,205	3,709	4,237	5,079	6,029	6,375	6,818
Eastern Europe	2,487	2,832	3,389	4,835	5,466	6,582	7,242	8,135	9,155	9,562	10,600
China/Communist Asia	9	7	5	6	15	21	24	21	27	33	37
LDC's[5]	3	8	10	17	10	18	16	11	15	10	15
OPEC											
Other Africa[6]	1	0	2	1	1	5	1	0	0	0	1
Other South America	0	1	1	3	2	6	6	1	1	2	1

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Excluding Zimbabwe.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1133–37 (vol. I); 1981, pp. 1169–73 (vol. I).

TABLE 7.—EAST EUROPEAN IMPORTS OF OTHER MANUFACTURED GOODS (SITC, REV., 6/8), 1970–80

[In millions of dollars, f.o.b.]

Origin	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	4,429	4,795	5,990	7,690	9,799	11,929	12,076	12,793	13,972	15,656	16,639
Industrial West [1] [2]	1,279	1,490	1,815	2,759	4,368	4,725	4,587	4,471	5,034	5,948	6,110
EEC [1] [3]	748	916	1,109	1,806	2,797	2,940	2,702	2,667	3,077	3,536	3,545
United States	21	10	20	26	58	45	56	49	54	60	81
Japan	60	80	99	125	261	213	240	236	220	290	284
Communist areas [4]	2,999	3,155	3,969	4,697	5,084	6,813	7,114	7,911	8,538	9,215	9,951
U.S.S.R.	1,614	1,684	1,854	2,121	2,207	3,401	3,472	3,778	4,335	4,389	4,766
Eastern Europe	1,253	1,332	1,969	2,357	2,613	3,091	3,270	3,664	3,576	4,161	4,452
China/Communist Asia	132	139	146	219	264	321	372	469	627	665	733
LDC's [5]	150	151	206	233	346	392	429	411	400	494	579
OPEC [6]	9	5	9	9	13	14	10	14	8	19	16
Other Africa [7]	51	34	57	52	71	83	71	76	77	84	42
Other South America	7	16	28	54	79	120	147	130	128	168	219

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.
[7] Excluding Zimbabwe.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1141–45 (vol. I); 1981, pp. 1177–83 (vol. I).

TABLE 8.—EAST EUROPEAN EXPORTS, 1970-80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	17,725	19,484	24,051	30,790	37,232	44,048	46,941	52,947	60,218	69,973	78,667
Industrial West [1] [2]	4,316	4,681	5,661	7,848	10,722	10,618	12,147	13,053	14,944	18,597	20,660
EEC [1] [3]	2,444	2,622	3,320	4,667	6,127	5,838	6,511	7,099	8,172	10,367	11,708
United States	152	178	216	331	442	436	600	787	1,039	1,153	1,144
Japan	88	70	88	139	206	187	171	196	244	312	289
Communist areas [4]	12,015	13,244	16,573	20,489	22,728	28,788	30,107	34,272	39,003	43,914	48,166
U.S.S.R.	6,630	7,284	9,335	10,934	11,719	15,573	15,662	18,189	20,955	24,610	26,939
Eastern Europe	5,000	5,511	6,760	8,983	10,343	12,352	13,544	15,187	16,728	17,727	19,487
China/Communist Asia	385	449	478	572	666	863	901	896	1,320	1,577	1,740
LDC's [5]	1,345	1,451	1,566	1,933	3,210	4,066	4,106	5,049	5,869	7,006	8,883
OPEC [6]	293	339	403	594	1,066	1,629	1,534	2,088	2,378	2,464	3,196
Other Africa	417	404	509	622	1,064	1,160	1,162	1,635	1,984	2,178	2,911
Other South America	283	283	304	338	486	759	856	882	940	1,206	1,388

[1] Excluding intra-German trade.

[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.

[3] Including Denmark, Iceland, and the United Kingdom.

[4] Excluding Yugoslavia.

[5] Developing market economies, as defined in "UN Standard Country Codes."

[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1092-3 (vol. I); 1981, pp. 1122-23 (vol. I).

TABLE 9.—EAST EUROPEAN EXPORTS OF FOOD, BEVERAGES, AND TOBACCO (SITC, REV. 0-1), 1970-80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	2,280	2,398	2,985	3,979	4,634	5,143	5,398	5,893	6,308	7,187	8,116
Industrial West [1] [2]	992	1,021	1,366	1,975	2,022	1,847	1,988	1,932	2,227	2,584	2,646
EEC [1] [3]	701	722	962	1,326	1,305	1,216	1,146	1,119	1,317	1,425	1,517
United States	59	61	71	110	109	164	184	192	221	272	259
Japan	10	17	22	29	32	30	32	40	45	55	60
Communist areas [4]	1,134	1,233	1,440	1,786	2,131	2,678	2,758	3,195	3,166	3,611	4,195
U.S.S.R.	707	760	933	1,123	1,216	1,764	1,722	2,063	1,898	2,257	2,667
Eastern Europe	407	446	480	632	877	869	985	1,087	1,193	1,268	1,420
China/Communist Asia	20	27	27	31	38	45	51	45	75	86	108
LDC's [5]	131	137	157	197	467	535	564	702	856	980	1,255
OPEC [6]	44	46	53	72	196	267	299	410	469	492	607
Other Africa	50	44	60	79	224	221	229	327	382	433	560
Other South America	28	30	39	37	55	87	80	80	114	105	138

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1098-99 (vol. I); 1981, pp. 1128-29 (vol. I).

TABLE 10.—EAST EUROPEAN EXPORTS OF CRUDE MATERIALS, EXCLUDING FUELS, OILS, AND FATS (SITC, REV., 2/4), 1970–80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	1,018	1,060	1,189	1,542	2,041	1,878	1,943	2,232	2,520	3,005	3,466
Industrial West [1] [2]	571	532	617	889	1,241	1,029	1,117	1,223	1,365	1,679	1,825
EEC [1] [3]	390	364	415	603	754	553	660	746	787	963	1,028
United States	6	7	7	8	10	15	19	23	33	40	34
Japan	9	7	6	8	10	14	5	10	12	14	10
Communist Areas [4]	403	444	501	568	619	652	673	786	884	1,038	1,221
U.S.S.R.	172	182	228	276	309	298	295	310	303	370	448
Eastern Europe	192	216	214	240	242	274	288	388	443	509	580
China/Communist Asia	39	46	59	52	68	80	90	88	138	159	193
LDC's [5]	45	73	56	74	117	130	143	223	258	287	365
OPEC [6]	10	11	19	27	41	57	61	112	120	117	159
Other Africa	15	25	27	40	49	43	44	123	138	151	191
Other South America	8	16	5	5	9	16	14	14	22	22	29

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1106–7 (vol. I); 1981, pp. 1138–39 (vol. I).

TABLE 11.—EAST EUROPEAN EXPORTS OF MINERAL FUELS AND RELATED MATERIALS (SITC, REV., 3), 1970–80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	940	1,024	1,168	1,489	2,460	3,454	3,767	3,717	4,062	5,277	6,371
Industrial West [1] [2]	409	478	559	769	1,587	1,933	2,205	2,078	2,356	3,436	4,377
EEC [1] [3]	179	231	285	386	853	1,003	1,081	960	1,222	2,123	2,548
United States	6	6	11	19	55	64	87	104	136	100	74
Japan	12	18	21	30	56	74	62	37	22	62	37
Communist areas [4]	499	524	579	671	784	1,317	1,399	1,423	1,537	1,641	1,578
U.S.S.R.	173	205	249	280	275	569	567	517	543	541	461
Eastern Europe	301	291	301	352	459	696	775	843	914	1,025	1,024
China/Communist Asia	25	28	29	39	50	52	57	63	80	75	93
LDC's [5]	32	22	31	49	80	135	163	188	156	199	214
OPEC [6]	0	0	1	5	1	7	7	11	5	6	8
Other Africa	13	9	12	24	18	15	15	29	32	37	46
Other South America	8	5	8	6	31	77	108	102	64	91	74

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1128–29 (vol. I); 1981, pp. 1162–63 (vol. I).

TABLE 12.—EAST EUROPEAN EXPORTS OF CHEMICALS (SITC, REV., 5), 1970–80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	1,225	1,436	1,703	2,082	2,759	3,245	3,350	3,717	4,147	4,898	6,014
Industrial West [1] [2]	299	344	415	528	913	835	905	1,018	1,113	1,467	1,854
EEC [1] [3]	168	185	216	299	488	419	453	539	556	739	962
United States	7	9	13	19	41	22	42	34	46	45	56
Japan	3	5	6	16	25	10	13	11	22	26	49
Communist areas [4]	800	935	1,122	1,352	1,499	1,933	2,035	2,204	2,448	2,653	3,123
U.S.S.R.	458	557	729	791	834	1,073	1,067	1,197	1,321	1,436	1,688
Eastern Europe	317	347	362	520	609	749	857	914	982	1,019	1,188
China/Communist Asia	25	31	31	41	56	111	111	93	145	198	247
LDC's [5]	125	153	143	161	299	459	405	491	581	769	1,030
OPEC [6]	11	14	27	35	74	137	111	127	147	163	222
Other Africa	30	39	31	42	92	101	104	150	179	197	281
Other South America	23	25	24	28	44	70	89	85	92	142	166

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1132–33 (vol. I); 1981, pp. 1168–69 (vol. I).

TABLE 13.—EAST EUROPEAN EXPORTS OF MACHINERY AND TRANSPORT EQUIPMENT (SITC, REV., 7), 1970–80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	6,872	7,683	9,736	12,570	14,311	18,152	19,433	22,299	26,640	30,416	33,816
Industrial West [1] [2]	487	673	766	1,034	1,270	1,644	1,852	2,073	2,379	2,723	2,894
EEC [1] [3]	211	249	311	442	595	771	822	933	1,089	1,152	1,282
United States	12	9	19	35	42	48	62	79	98	204	237
Japan	12	10	12	14	18	10	11	11	16	27	27
Communist areas [4]	5,793	6,326	8,249	10,675	11,706	14,726	15,603	18,150	21,822	24,667	26,855
U.S.S.R.	3,125	3,297	4,649	5,580	5,948	7,780	7,972	9,622	12,087	14,386	15,537
Eastern Europe	2,487	2,832	3,389	4,835	5,466	6,582	7,242	8,135	9,155	9,562	10,600
China/Communist Asia	181	197	211	260	292	364	389	393	580	719	718
LDC's [5]	587	638	675	809	1,200	1,643	1,769	2,013	2,323	2,719	3,474
OPEC [6]	109	137	159	248	394	698	741	796	936	957	1,215
Other Africa	171	159	228	232	337	429	386	506	675	698	944
Other South America	131	139	125	156	207	321	356	416	396	541	673

[1] Excluding intra-German trade.
[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.
[3] Including Denmark, Iceland, and the United Kingdom.
[4] Excluding Yugoslavia.
[5] Developing market economies, as defined in "UN Standard Country Codes."
[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1136–37 (vol. I); 1981, pp. 1172–73 (vol. I).

TABLE 14.—EAST EUROPEAN EXPORTS OF OTHER MANUFACTURED GOODS (SITC, REV., 6/8), 1970–80

[In millions of dollars, f.o.b.]

Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
World [1]	5,230	5,725	7,005	8,595	10,569	11,763	12,501	14,167	15,822	18,520	20,401
Industrial West [1] [2]	1,520	1,609	1,900	2,617	3,597	3,296	4,020	4,659	5,396	6,555	6,936
EEC [1] [3]	776	856	1,101	1,579	2,079	1,847	2,354	2,753	3,117	3,890	4,267
United States	61	86	96	139	182	119	205	352	500	486	482
Japan	41	12	20	41	64	50	47	81	124	126	103
Communist areas [4]	3,281	3,666	4,570	5,275	5,720	7,206	7,271	8,081	7,542	9,914	10,829
U.S.S.R.	1,935	2,214	2,481	2,774	2,948	3,907	3,804	4,215	3,767	5,446	6,026
Eastern Europe	1,253	1,332	1,969	2,357	2,613	3,091	3,270	3,664	3,576	4,161	4,452
China/Communist Asia	93	120	120	144	159	208	197	202	199	307	351
LDC's [5]	417	420	489	606	1,020	1,126	1,207	1,405	1,258	2,023	2,498
OPEC [6]	118	131	139	192	350	447	487	615	521	722	971
Other Africa	135	128	144	188	335	338	369	493	419	653	870
Other South America	84	67	101	101	139	183	204	181	233	301	297

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[1] Excluding intra-German trade.

[2] Developed market economies, as defined in "UN Standard Country Codes," Annex II, Statistical Papers, Series M, No. 49.

[3] Including Denmark, Iceland, and the United Kingdom.

[4] Excluding Yugoslavia.

[5] Developing market economies, as defined in "UN Standard Country Codes."

[6] Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates (Abu Dhabi and Dubai), and Venezuela.

Source: UN Yearbook of International Trade Statistics, 1980, pp. 1144–45 (vol. I); 1981, pp. 1182–83 (vol. I).

EASTERN EUROPE-LDC ECONOMIC RELATIONS IN THE EIGHTIES

By Marie Lavigne *

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I. Introduction

Is there a specificity in the relations between the smaller Eastern European countries and the developing countries? Usually it is assumed that these relations are following the Soviet model. In the Western analyses, emphasis is put on Soviet expansion (economic, political, military, etc.) in the Third World. In the literature of the CMEA countries, the superiority of a new type of relations with the developing countries is assessed. In both, no clear distinction is made between the Soviet Union and its European CMEA partners as to their approach toward the Third World (except for Romania, explicitly in the Western analyses, implicitly in Eastern literature). However, there are substantial differences between the "LDC-USSR" and "LDC-Eastern Europe" pattern; these differences appear increasingly clear in the recent years. One may sum them as follows:

(1) For the countries of Eastern Europe, trade relations with the Third World represent a smaller share in their total trade (with the exception of Romania); though, in most cases, they grow at a faster rate than in the Soviet case.

(2) East Europe's trade is not conducted with the same partners as Soviet trade. In particular, the relations of the "Six" with the CMEA LDCs (Cuba, Vietnam, Mongolia) and with the group of countries "with socialist orientation" (Afghanistan, Ethiopia, South Yemen, Mozambique, Angola) are much less developed than those

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of the USSR. A closer investigation in the typology of the developing countries and in the partners of the Six reveals a distinct rationale of the Eastern European countries.

(3) The commodity pattern is also very different. The Six receive a very low share of their manufacture imports from LDCs; their share of oil imports has increased (in contrast to the USSR) relative to their imports of raw materials; their share of food imports is decreasing and remains much lower than in the Soviet case. On the side of exports, machinery sales are decreasing, and sales of food or semi-finished goods are growing proportionately.

(4) East Europe's trade with the LDCs seems to be guided, more than in the Soviet case, by purely economic considerations. In the recent years a major aim has been the earning of hard currency (exports of the Six to the Third World increased by over 20 percent during 1981-82; imports decreased by over 25 percent). It is, however, very difficult to assess the exact amount of these gains.

(5) The financial flows of aid are also less important for East Europe, in comparison. Whatever the conflicting evaluations of the amount of total aid, the USSR bears the main burden of it.

(6) Economic and technical cooperation with the LDCs seems to display, especially in the last few years, some intra-CMEA coordination as to the recipients of this type of assistance and as to the areas of assistance (for instance: Bulgarian expertise on agricultural development, Hungarian cooperation in the field of medical development, etc.). The question is whether this "division of labor" is systematically planned within the CMEA, or corresponds to the general "specialization pattern" of the Six, devised for intra-CMEA trade and "spontaneously" extrapolated to the Third World.

To sum up: Eastern Europe needs to secure its supplies of raw materials and its surpluses in hard currencies. For the time being, relations with the Third World are guided by these economic and financial requirements. These pragmatic aims undoubtedly push back the conception of a global socialist strategy in the developing world.

II. Shares in Trade

1. The general pattern of East-South trade at first glance displays a stable distribution between the "Six", on one side, and the USSR, on the other, throughout the period analyzed. The share of the Soviet Union in total East-South trade was 59 percent both in 1970 and (according to estimates) in 1982 (see table I). However, over this period, it increased until 1973 (reaching 64 percent), then steadily decreased until 1980 (51 percent); a strong upswing occurred in 1981 and 1982.

Throughout the Seventies, the share of the USSR in East-South trade was always higher in total exports than total imports, with the exception of the year 1975. In 1981 and 1982, however, its share was markedly higher in total imports than in total exports. This change should be attributed to a very important feature of trade between the Six and the developing countries. Experiencing balance of payments difficulties in their trade with the West, the Six tried to expand their exports to the South while drastically reducing their imports. Already in 1975, their behavior was fairly similar (a strong drive in exports, a stabilization of imports). The export drive of the USSR has been less strong, and its adjustments on the import side have been lagging compared to those of the Six.

The shares of the Six in total East-South trade have fluctuated equally more or less over the period. There has been a decreasing trend for GDR, Hungary and Poland (especially on the import side), and particularly for Czechoslovakia. For the two Southern Balkan countries, their share in the total trade of the Six with the South has increased; in the case of Bulgaria it doubled on the export side; for Romania it trebled.

2. These changes reflect the overall dynamic of their trade, and more specifically the variations within the share of the Third World in the total trade of each country.

This share was highest for the USSR up to 1974 (between 13 and 14 percent, from 1970 on), and with one exception remained so afterwards (fluctuating between 12 and 15 percent). Beginning from 1975 Romania dramatically increased its trade with the Third World; the share of the developing countries in its total trade attained almost 30 percent in 1981, a proportion twice as high as for the USSR. This tremendous expansion has to be related to the political options of Romania, which, beginning from the mid-seventies, growingly asserted its links with the developing world, joining the "Group of 77" in 1976. It is also due to the heavy reliance of this country upon the oil exporting countries for its oil supplies. The share of OPEC in Romanian imports from the Third World, the highest of the Six, jumped from 45 percent in 1974 to over 70 in 1981.

As for the other Eastern European countries, their trade relations with the Third World remain well under the Soviet level (table II). Two of them, the most industrialized, maintain a very low level of trade with the developing countries, slightly rising in the case of GDR (from 4 percent in 1970 to 5.4 percent in 1981), and slightly falling for Czechoslovakia (from 7.6 to 7.1 percent over the same period). The pattern of Polish trade was very similar up to 1978. Throughout most of the seventies the share of the Third World remained rather stable at 6.5 percent or slightly under. Beginning from 1979 it suddenly increased, first on the import side (related to the second oil shock), and afterwards, in the eighties, on the export side. The sales to the Third World remained fairly stable throughout 1980–82 while Polish exports were shrinking globally; at the same time, Polish imports from the developing countries were reduced by two-thirds, while globally Polish purchases were curtailed by slightly less than 50%. One may thus infer that the restoration of a "normal" foreign trade pattern in Poland should bring about a reduction in the share of trade with the Third World; this share seems to have been "mechanically" inflated by the general deterioration of foreign trade.

The cases of Bulgaria and Hungary are different. Both had a low level of trade with the Third World in the beginning of the seventies (5.6 percent for Bulgaria in 1970, 6.5 for Hungary); this share doubled during the period, reaching in 1982 11.4 and 11.6 percent, respectively. This appears as a more lasting trend, and has to be related to definite strategies. In the case of Bulgaria, while the share of imports from the developing countries remained fairly stable and generally under 5 percent for the whole period, the share of exports strongly increased starting in 1974, and almost trebled over the period, expressing a consistent policy of deriving high export revenues from Middle East countries. The share of Arab and Islamic Middle East countries in total exports to the Third World reached 84 percent in 1982, a share only matched by Romania. Hungary's exports and imports to and from the Third World developed at a comparable pace. Even if the post-1976 increase in the share of trade with these countries has to be deflated by some 2 points (because of a statistical bias linked with a change in foreign trade recording), it is significant and expresses a global strategy of trade diversification. Hungary is not only (perhaps not mainly) striving at hard currency gains from trade with developing countries. On the import side, along with the role of these countries as suppliers of food and raw materials, the Hungarian authorities emphasize a shift toward imports of finished and semi-finished goods, "in harmony with the Hungarian selective development policy." [1] As will be seen in section IV, the need for an increased share of such imports is advocated by all the Eastern European countries in order to comply with the demands of the Third World. Hungary is explicitly relating this compliance to a labor-saving domestic policy, and the willingness of concentrating domestic production on high quality consumer goods designed for export to the West (especially in the field of clothing).

Thus, although a global view would indicate a growing involvement of South-East Europe in trade with the developing countries, particularly on the export side, a closer investigation reveals a combination of quite different cases.

III. PARTNERS

The South is not a homogenous group. Apart from the obvious division in terms of continents, one can also distribute the partners of the Eastern countries according to specific criteria. This leads to a typology of the developing countries, which helps to explain the directions of trade, and also of cooperation. It then becomes clear that each country has its own strategy, stemming from political, geographical and historical reasons, for developing trade specifically with each group of Third World partners. Finally, trade is heavily concentrated among a very small number of partners, the first five usually accounting for 50–55% of total trade.

A. An Essay in Typology

The socialist countries do not readily accept the concept of "Third World" precisely because it introduces a "third" way, different from the binary option between capitalism and socialism.[2] The qualification of "developing" countries has been retained as imposed by the international practice; however, especially in Soviet literature, it is frequently coupled with political qualifications such as "liberated countries".[3] As has been noted in the Introduction, once labeled as "socialist" (belonging to CMEA or not), developing countries are no longer considered as such in the classification of the socialist countries. This is why Mongolia, Vietnam and Cuba, CMEA members are not treated as developing countries; neither are North Korea and Laos (beginning from 1977 for latter). If added to the list, they would increase by a small but non negligible amount (1 to 2.5 percentage points) the share of the "Third World" in the total trade of each of the "Six". The increase would be quite significant for the USSR (over 7 points on average).

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[1] Resolution of the Central Committee of the Hungarian Socialist Workers' Party of 20 October 1977, quoted in Dobozi, ed., 1978, pp. 110.

[2] The only reference found in Russian containing this expression—between inverted commas—is a book translated from Bulgarian, by Ivan Ganev, Sev i "Tretii Mir" (CMEA and the Third World), Moscow Ekonomika, 1976. In Polish, see Paszynski (1982); in Hungarian, Dobozi (1983).

Outside the socialist world, how should one classify the developing countries? Russian literature is extensive on this topic.[4] In the writings of the Soviet authors, two main criteria are used: the ideological-political one, and the economic one. The first distinguishes between the "countries with a socialist orientation", a concept that the beginning of the seventies replaced the older concept of "socialist path of development", and all the other countries. However, unlike in the dominant view held during the sixties and early seventies, it is now acknowledged that the "socialist orientation" is chosen only by a few countries and that most of the developing world will remain in the capitalist orbit.[5] Thus it is increasingly necessary to use another classification based upon the criterion of the development level, which is quite similar to the usual approaches taken in the Western literature.[6]

Such debates are less frequent in the works of East European authors, who seem more inclined to accept without discussion the usual categories found in Western literature.[7] The only book found by this author on this question, in Czech (Foltyn and Dankovicova, 1982) sums up Soviet research in the field, then proposes a classification where the relations of production (i.e., the political criteria based upon the capitalist/socialist orientation) are dominant over the forces of production (i.e. the level of development). Thus, a first division is made between the countries with a socialist orientation (hereafter called CSO's) and the countries with a capitalist orientation, then they themselves are divided into countries "favoring cooperation with the socialist countries" (such as India, Mexico, etc.), and countries "with a strong political and economic orientation toward advanced capitalist countries" (Brazil, Argentina, Chile, Pakistan, Indonesia, Cameroon, Kenya, etc.). A second division is made according to the economic conditions for adequate relations between the developing countries and a small socialist country such as Czechoslovakia, i.e., level of the industrial potential, existence of raw materials potential.

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[3] See for instance Chekhutov (1981).

[4] See the bibliography in Don (1983).

[5] See Bogomolov (1980), p. 258: "It would be erroneous to assert that the relations between the socialist world and the developing countries are based upon the principle of socialist solidarity. No. We work with states which in their majority remain on a capitalist path of development; only a few of them are following a socialist orientation."

[6] See Sheinis (1980), Foltyn/Dankovicova (1982). Sheinis uses three main criteria: the level of development, the type of development (including social and structural criteria), the size of the economy. Thus one should distinguish: the "middle-developed capitalism" (including what is called "new industrializing countries"; and some others near to this group); the oil producers; the "very small countries"; the lower middle level countries; the "upper" and "lower" low level countries, etc.

[7] Thus, Paszynski (1982) distinguishes four groups: oil exporters, new industrializing countries, countries "with traditional framework or production and export," least-developed countries.

These classifications are interesting because they clearly show the dual rationale of trade and cooperative relations: the "socialist orientation" of a small number of countries creates a sort of moral obligation to assist them; purely economic considerations imply a concentration of trade with those of the developing countries—be they "orthodoxically" or "non-orthodoxically" (Foltyn and Dankovicova, p. 106) capitalist—that offer favorable opportunities.[8]

In this study an overlapping classification system is used which is based on "political" and "developmental" criteria along with the geographical division retained in the UN classifications:

(1) Asia;
(2) Africa (total and Subsaharian);
(3) Latin and Central America;
(4) Countries with a socialist orientation (this category is divided into two subgroups);
(5) OPEC;
(6) New industrializing countries;
(7) Arab and Islamic countries.

This classification does not take into account the scale factor, which would underline the particular features of trade with large countries, such as Nigeria in Africa and especially India in Asia.

Some of these groups need a further qualification. Group 4 (CSO) includes a subgroup (a) made of the "core" of these countries, Angola, Mozambique and Ethiopia in Africa; South Yemen and Afghanistan in Asia. These five countries have all been admitted to the CMEA as observers between 1976 and 1979. They are all ruled by a marxist-type party, with power structure organized along the people's democracy principle. By the end of the seventies, all of these countries implemented an agrarian reform program, developed a public sector in industry, started planning and signed bilateral treaties of friendship and cooperation with most of the socialist countries (but so have some other countries not belonging to this group). They are all in either a state of civil war, guerilla (Afghanistan, Angola, Ethiopia, Mozambique) or armed conflicts at their borders (Angola, Mozambique, Yemen). Around this "nucleus", a second circle of CSO includes two Middle Eastern states (Iraq and Syria, but definitely not Libya, notwithstanding its close political links with the USSR and Eastern Europe), six (mainly tropical) African states (Algeria, Benin, Congo, Guinea, Madagascar, Tanzania), and Burma in South-East Asia. This group excludes some "has-beens," Somalia being the most recent case, whose "socialist orientation" was reversed in 1977. The "nucleus" itself may be enriched by newcomers: the latest seems to be Nicaragua, although its ranking in this group remains controversial.

Group 6 includes the New industrializing countries (NICs) according to the most restrictive classification (the "four" Asian countries: South Korea, Taiwan, Singapore, Hong Kong; the "three" Latin American: Argentina, Brazil, Mexico).

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[8] Few Western studies are devoted to typology problems. Those which do are quite definitely oriented toward a preeminence of the political side of the classification. This is implied by the very title, as well as by the editor's first chapter, of P. Wiles' "New Communist Third World" (1982). It is also to be found in the four-group classification by M. Radu (in M. Radu, ed., "Eastern Europe and the Third World," 1981, pp. 15-22).

Group 7 is a composite group which includes the Middle East (without Israel) in the UN definition, plus the Arabic countries of North Africa (Morocco, Algeria, Tunisia, Mauritania, Libya, Egypt, Sudan). This group has by far the biggest share in the total trade of the Third World with the socialist countries (USSR and Eastern Europe). It combines in itself a set of different, and sometimes contradictory interests: the geographical closeness (for USSR, Romania, Bulgaria); strategic and political importance, particularly in a time of lasting conflicts in the area; role of the OPEC members in this group as oil suppliers and as markets; existence of long-term links through cooperation agreements, some of them dating as far back as the end of the fifties. The strength of these links survives political rifts and oppositions: the cases of Egypt, Turkey, Iran are cases in point.

B. Trade With the Main Groups of Partners

The shares in trade have been calculated on the bases of total trade of each Eastern European country with its identified partners (table III) for three sample years (1970, 1975, 1981). The same has been done for the USSR for comparison. However, one has to state that the comparison with the Soviet Union may be biased, as the undistributed residual in Soviet exports to the Third World is very high (see methodological note). For the Six, the residual is low, less than 5 percent in most cases. The only notable exception is Bulgaria, with an import residual at the beginning and the end of the period, which may affect some data.

1. The general pattern of trade with the Third World is similar for all the CMEA European countries over the period:

A dominant and slightly increasing share with Asia (on average, about 50 percent of total trade in 1970, 58 percent in 1981);

A decreasing share with Africa (over 35 percent in 1970, amounting to 25 percent in 1981 in average); most of this trade is attributed to Northern Africa, the share of Tropical Africa being near to 5 percent for most of the CMEA countries;

With Latin America, a rather low and stable share in exports, and for most countries a highly fluctuating and much greater share in imports, due to the increasing supplies of food from this area at the end of the period.

2. Along with these similarities, some differences appear between the Six and the USSR:

The Soviet Union is relatively more involved in trade with Asia than any of its partners except Romania, for obvious political and geographical reasons;

The share of African trade remains fairly stable for the Six (around 30 percent) while it decreases sharply for the USSR (from 45 percent in 1970 to less than 20 in 1981), mainly because of a reorientation of Soviet import trade towards Latin America;

Almost all East European countries sell a higher share of their exports to Latin America than the Soviet Union. This is especially the case for Poland, Czechoslovakia and GDR.[9] These countries also began importing from this area earlier than the Soviet Union. Their machinery exports are more suitable for the Latin America market than those of the Soviet market which is mainly confined to equipment for hydroelectric power stations. As importers, the East European countries offer a more diversified market, not only for food, but also for raw materials, which the Soviet Union does not buy from this area.

Some specific groupings (leaving aside OPEC, which is dealt with in another section of the present compendium) will now be considered.

3. The group of the CSO is made of two subgroups of unequal political significance and economic weight.

In the subgroup 1, one finds the countries the most engaged in a "socialist orientation"; their needs (in machinery, for some of them fuels, semi-finished goods) are high (all of these countries belong to the group of "less advanced countries" in the Third World); their export potential is for the time being low, even if resources do exist, because of the low level of exploitation of raw materials and the present state of war or instability. This makes them, political considerations aside, highly unattractive as normal trade partners. Not surprisingly, USSR is relatively more involved in trade with this group than any of the Six, with the important exception, the GDR. East Germany has since 1977 increasingly developed its relations with the three African countries of the group, especially Mozambique; it is the most important trade partner of this country, largely ahead of the USSR (with a turnover more than twice as large since 1979). Over 80 percent of its total trade with Tropical Africa is with Mozambique, Angola and Ethiopia.[10] This may be explained by the role of the GDR as closest political (and military) ally of the Soviet Union in these countries, but also by economic long-term interests in imports once their raw material resources are developed (coal, tantalum from Mozambique, oil from Angola and Ethiopia, cotton from Ethiopia).

As for the second group of CSO, it has an increasingly important share in trade (especially on the export side) for all European CMEA countries. But here trade is heavily concentrated on three partners, Iraq, Syria and Algeria; Iraq is almost consistently one of the three most important partners of the CMEA Six in the Third World. The rationale is to be found here in the privileged links with Arab Mediterranean countries, long-time partners in economic cooperation as well as in trade.

4. The Middle-East Arab (and Islamic, so as to include Turkey and Iran) countries appear, for reasons already mentioned, as the most important partner group for the CMEA group, and apparently more than for the USSR (however, there might be here a statistical bias if it is assumed that part of the non-reported export trade of the Soviet Union with the Third World is with these countries, in addition to the flows reported by each country). Two countries

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[9] Since 1975, GDR does not give separate figures for imports and exports. This statement is derived from mirror statistics of the partner countries. cf. Zumaran (1982), p. 36.

[10] cf. Mardek/Wünsche (1982): "with the countries which have chosen a socialist path of development, relations acquire a new quality" (p. 190).

achieve impressive export records in this area: Bulgaria and Romania. Bulgaria, in particular, has for several years been expanding its sales of food and especially lamb and mutton meat, along with traditional machinery exports.[11] The main partners in this group are oil exporting countries (Iraq, Iran, Libya). Turkey appears as an important partner for Bulgaria and Hungary, Egypt for the GDR, Romania and Czechoslovakia. The non-oil exporters in this group are increasingly supplying their Eastern European buyers with semi-finished and finished goods (textiles and clothing in particular) along with traditional sales of raw materials and food.

5. The less-developed trade relations, especially on the export side, are with the NICs. Here different reasons tend to explain a sluggish trade: political antagonisms (with the Asian NICs), geographical distance (for the Latin American NICs), lack of CMEA country adaptability to already sophisticated markets, which are generally more protected than the Western European markets. Brazil is by far the most important partner in this group.

C. Main Trading Partners of the CMEA

Table IV shows the main trading partners of the Eastern European countries in 1970, 1975 and 1981. It comprises 25 countries which have been among the ten top partners in export or import trade over the period. This may be considered as a representative sample; the ten top export partners represent on the average between 70 and 80 percent of total exports to the Third World, the ten top import partners, between 65 and 75 percent; the concentration tends to increase over time.

Five countries have been selected as the most consistent partners of all the Eastern European countries over the period. Egypt was the dominant partner in the beginning of the seventies; it began to recede even before the Soviet-Egypt conflict in 1976, but still remains a non-negligible export outlet, which indicates a persistence of trade flows resulting from cooperative links. Conversely, Libya, absent or low down on the list at the beginning of the seventies, has become a significant buyer from Eastern Europe; reverse flows (which are oil sales) appear only in the case of Romania (but one should remember Bulgaria has stopped recording oil imports.)[12] Iraq and Iran are constantly high-ranked partners; the Iran-Iraq conflict has increased Iraq's trade; but trade links with Iran, which had been somewhat reduced after the Islamic revolution, rapidly regained momentum as early as in 1981, Romania being the most active trading partner. Outside the Middle East, India appears as a significant buyer and seller throughout the period. It is the only important Third World country that has a diversified export and import structure.

Following the leading group, five other countries emerge as important partners, four of them being Middle East and Mediterranean countries: Turkey, Syria, Algeria, Morocco, and Brazil. Their trade relations do not extend to all Eastern European: Bulgaria has an irregular trade with Brazil, Morocco is not an important partner to Hungary, or Syria to Poland. Algeria, Syria and Turkey appear generally as buyers (of equipment); Brazil and Morocco are mainly sellers (of grain, meat, oil seeds, iron ore, in the former case, phosphate rock in the latter).

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[11] cf. Grozdanova, 1981.

[12] In the Bulgarian Statistical Yearbook of Foreign Trade, the line "Libya" is quite obviously deleted on the import side (in the trade commodities section).

The last 15 countries are again mainly situated in the Middle East (Lebanon, Tunisia, Kuwait, Saudi Arabia, Jordan) and Latin America (Peru, Argentina, Columbia, Ecuador). In Asia, Pakistan, Indonesia, Malaysia, and with some countries Singapore maintain a steady flow of trade. Nigeria and the Ivory Coast are the only Tropical African countries appearing on this list. Nigeria is the most important market in this area for the Six because of its size; it accounted for 40 to 50 percent of their trade turnover with Tropical Africa in the late seventies. The Ivory Coast is the main supplier of cocoa to most of the Six.

This survey of the main partners in trade with the Six shows that trade links are closely related to the commodity pattern of trade. It also reveals a strong dissymmetry in trade: exports and imports are seldom balanced; most of the partner countries appear either as exporters or as importers. The commodity pattern and the balance in trade are briefly surveyed in the following two sections.

IV. THE COMMODITY PATTERN

Tables V to VIII illustrate the commodity pattern of trade between the Six and the developing countries (total; Asia minus Middle East; Africa; Latin America. The pattern of trade with OPEC is not examined here. UN statistical data have been used (see methodological appendix).

For the entire period exports of the Six were primarily manufactures (over 70 percent in 1981); their imports consisted mostly of primary goods (almost 90 percent in 1981). However, manufactures (SITC 5 to 8) represented a decreasing percentage of total exports, and conversely the share of primary goods (SITC 0 to 4) slowly increased. The general "North-South" type pattern of this trade thus seems fairly clear.

A closer investigation by commodity categories, however, brings out some distinctive features. With Southern and Eastern Asia, the share of manufactures was higher than in overall exports to the Third World; this was principally due to the high proportion of chemicals (20 percent in 1970, 30 percent at the end of the period), while the share of machinery was steadily declining. Thus, for this area, the Eastern European countries increasingly appeared as suppliers of intermediate goods (chemicals, iron and steel, glass, paper, etc.) along with machinery (in relation with cooperation agreements). In the case of Africa, the decline in equipment sales (class 7) was accompanied by an increase in foods sales; as a similar trend appeared in the case of OPEC, one may infer that it concerned mainly Mediterranean Africa, the main exporters being Bulgaria and Hungary. In Latin America, the decrease in the share of machinery sales and, more significantly still, in the share of semi-finished goods was partly offset by a vigorous expansion of chemicals including large quantities of medicinal and pharmaceutical goods (primarily from Bulgaria, Hungary, Romania, Czechoslovakia), and by a surge in fuel exports (almost entirely to be attributed to coal sales of Poland).

On the import side, along with the increase in the share of primary goods, the most striking feature was the sharp rise in oil purchases beginning in 1974; there was, of course, a considerable difference in this respect between the Six and the USSR. The growth of imports of fuels (class 3), in share (values and volumes diminishing from 1981 on), somewhat blurs the fact that the value of the manufactured imports from the Third World increased exactly at the same rate as total imports, fuels excluded, but not faster. This is exactly a point of dispute between the developing and the CMEA countries, the former requesting a higher growth in imports of manufactures by the latter. At present, the highest share of this class of goods is achieved in imports from Asia, almost exclusively on account of class 6 + 8 (mainly textiles, clothing, footwear). In trade with Africa, the share of manufactures has strongly declined and is now negligible; in imports from Latin America, it is exclusively concentrated on products of class 6+8 (textile yarn, non-ferrous metals).

Within the primary products group, the shares of food (0+1) and of raw materials (2+4) were similar overall, and both declined from the mid-seventies (parallel to the increase of the share of class 3). However, sharp discrepancies appear by areas. From Africa, food imports have to be attributed mainly to Tropical African countries (Ghana, Ivory Coast, Nigeria, Cameroon for cocoa, Angola, Ethiopia, Ghana for coffee, etc.); they show sharp fluctuations according to the general economic situation in the Eastern European countries, as this type of goods is not considered as vital for import. The share of raw materials in total imports from Africa, dominant in the beginning of the seventies, has been reduced as the share of oil imports (from Northern Africa and Nigeria) has grown. The increase mainly consists of metal ores, bauxite, phosphate. Imports from Asia have higher and more stable shares of food (rice, tea, coffee, vegetable oil) and raw materials (cotton, wool, natural rubber, metal ores); classes 0-4 together have, on average, amounted to two-thirds of total imports. The pattern of import trade with Latin America is quite different; about two-thirds of total imports have been represented by food, with a quite stable proportion over the whole period (unlike in the Soviet case, where both the share of imports from Latin America in total imports, and the share of food in those purchases, rose dramatically at the end of the seventies).

Will this commodity pattern last? At present it cannot be considered as a sheer replica of the North-South pattern. On the export side, equipment sales (dominant in the export of the most industrialized of the Six) are linked to cooperation programs; along with them, the relatively high shares of non-sophisticated semi-finished goods, and of food (especially for the Southern East European countries) place the Eastern European countries at an intermediate level as compared with the developed market economies. On the import side, the purchases of the Six are related to a two-fold logic. First, the need for supplies no longer secured by the Soviet Union (fuel, mineral raw materials) compels them to develop imports of such goods from the Third World. Second, the difficulties of Eastern European agriculture (although not so dramatic as those of the

USSR) and the permanent need for food supplies that cannot be produced domestically require a permanent inflow of food products (fodder; tropical agricultural commodities).

Quite clearly then, on the import side, the main interest for Eastern Europe lies in adequate supplies of primary goods from the Third World. The expansion of purchases of manufactures is seen largely as a political requirement, and viewed with some equivocation.[13] Two different approaches may be found here. According to the first, the best strategy is a purely commercial one: "purchasing in that country where the conditions of purchase are more profitable for the buyer." [14] The Polish author who expressed this view assumes that in the future there will be no dramatic shortages in the supply of raw materials; even if there were a shortage, a long-term strategy based upon cooperation in investment in the Third World would not be adequate "because of the modest prospects of investment capital from the socialist states."

The opposite strategy is long-term and structural. It has been developed at length by the Hungarian expert I. Dobozi, among others. This author advocates "closer and more direct and sophisticated forms of cooperation in production—such as compensation agreements, joint companies, international consortia, joint socialist international enterprises."[15] These forms would guarantee access to mineral resources, but the Eastern European countries would also have to take into account "the striving of the developing countries to export increasing percentages of the minerals and fuels extracted on their territory in processed form," which would lead to an increase in imports of semi-finished goods.

It is mainly in Soviet literature that one can currently find proposals for long-term cooperation aimed at an expansion of sales of finished goods in socialist markets, not surprisingly, because the domestic production in the Soviet Union is still lagging behind the needs for such goods. A leading Soviet expert, L. Zevin, writes: "It is now possible to determine such production branches in developing countries which might be expanded or created through joint efforts, with a long-term orientation on exports to the CMEA countries, including, on the part of the latter, refraining from developing or creating domestic enterprises of the same profile."[16] One may wonder whether the smaller CMEA countries are really ready to accept such an adjustment or "redeployment."

V. BALANCES IN TRADE

One major reason for the reluctance to increase imports of finished goods from the Third World, aside from the potential competition between these goods and those produced domestically for the national market, is the fact that all things being equal, such imports would reduce the imbalance in trade and the surpluses which the Six have been striving for, especially in the recent years, in their Third World trade.

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[13] See Angelis for Czechoslovakia, in I. Dobozi, ed. (1978), p. 186; Paszynski for Poland (1982) p. 72.

[14] Paszynski, 1982, p. 74.

[15] Dobozi, 1982, p. 48.

[16] L. Zevin (1983) p. 125; see also Bogomolov, ed. (1982), p. 216: a process is underway to secure for the developing countries a definite range of industries ("redeployment of industries") (in English in the Russian text).

Table II shows the magnitude of these surpluses for all the Six (Romania, to a lesser degree Poland in 1979 and 1980 are the only exceptions). It has often been asserted that these surpluses helped to compensate for their hard currency deficits with the Western countries, or accounted for the recent global surpluses achieved in hard currencies. This seems to have been particularly the case for Bulgaria and Poland in 1982: the surplus with the Third World is 60 percent higher than the value of import in the first case, 80 percent higher in the second. More generally, the sharp increase in exports to the Third World in 1980–1982 (estimated, according to preliminary data for 1982, at over 20 percent) and the cutback in imports (over 25 percent) appear to indicate such a strategy.

Is this so obvious? The first question is whether the surpluses achieved are, in fact, in hard currencies.

The number of clearing agreements presently in force is very low (see table IX). Every time such an agreement is concluded with a country maintaining a surplus in their relations with the Six (Brazil, Colombia, Ecuador), one may speak of a hard currency gain for the East European countries. For most of them Hungary, Poland, Romania), the total clearing balance was negative in 1981 (because of deficits with Brazil in the two first cases, with Iran in the third); only with Bulgaria and Czechoslovakia did the clearing balance show a slight surplus. (GDR has not been considered because of the unavailability of trade data by individual countries).

Outside the limited sphere of clearing agreements, is the surplus achieved always paid for in hard currency? Among the main trading partners of the CMEA countries in deficit with them, one finds the OPEC countries. The positive balance with this group amounted in 1981, for the Five, to a total of 2.2 to 2.5 billion dollars (the global surplus with the Third World, for the same countries, amounting to 2.9 billion dollars). Even in this case, the surplus must be reduced by the (unknown) amount of exports made on the basis of cooperation agreements: machinery and equipment are supplied along these lines with long-term credits. Conversely, some of the import trade results from repayment of debts—again, in a proportion generally unknown.[17]

Most of the other debtors of the CMEA countries are not in fact, able to pay—and this is true particularly in the case of the CSOs. The political links with these countries would prevent compulsory payments, which would anyhow be generally impossible. One then has to conclude—without any published evidence—that revolving short-term credits are given to these countries as a form of aid.

In addition, an unidentified amount of trade is conducted through barter even in the absence of any general clearing agreement.[18]

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[17] Unless it is specified in the agreement, as was the case for the famous Soviet credit to Guinea in 1969 for the development of bauxite (Veyrat, 1983, p. 65).

[18] This is the case between GDR and Mozambique, for a whole range of goods: tea, fruit, fish, cotton, coal from Mozambique; some types of machinery, consumer goods, canned food, clothing from GDR. See Schoeller (1982), p. 9.

Finally, the balance between CMEA countries and the Third World is also affected by middlemen trade. This cannot be approached through statistical measure: Hungary is the only country to give statistics both by country of destination/origin and by seller/buyer. In recent years 15–17 percent of Hungarian imports from developed countries was "middle-man trade" or a form of barter, and a part of it must be attributed to imports originating from developing countries (about 8–10 percent of these imports). Poland, Czechoslovakia, GDR buy a significant part of their cocoa and coffee through "middle-man trade" (because of price rebates and commercial facilities). Thus part of the deficit with Western countries must be attributed in reality to the Third World; this does not modify the global balance in hard currencies, but certainly distorts the evaluation of the balance with developing countries.

To sum up, it seems clear that the CMEA East European countries try to gain hard currency surplusses in their Third World trade.[19] But the amounts actually gained are certainly less than the apparent positive balance with these countries.

VI. AID

Until very recently, the East European countries strongly opposed a computation of their financial aid to the developing countries on the basis of the same methodology as used by the developed market economies. They also rejected the very concept of "aid", while insisting on specific forms of economic cooperation (long-term credits with low interest rates, consisting in supplies of equipment, generally repaid through deliveries of traditional exports goods).

The evaluation of the flows of financial aid coming from Eastern Europe is currently made by Western experts and organizations. OECD regularly publishes data in the annual Report by the Chairman of the Development Assistance Committee or in special reports.[20] According to the OECD data, the total amount of this assistance is low (5 to 6 percent of total official development assistance) although these estimates take into account all the Third World, including the socialist underdeveloped countries; it is granted on harder terms than is usually the case from Western countries, especially to non-Communist countries; represents a very low share in terms of the G.N.P. of the donor countries (0.14 percent at the beginning of the eighties).

The share of the USSR in total aid is much higher, according to the same sources, than its share in trade; slightly under 80 percent during the past decade.[21] The GDR ranks second with 10 percent—also significantly more than its share in the trade of the CMEA Seven with the Third World. The remaining ten percent are distributed between Czechoslovakia, Bulgaria and Hungary. The recipient countries are for the most part socialist country members of the CMEA (Cuba, Vietnam), which accounted for over two thirds of total aid in 1981 and 1982. The other major recipients are either socialist countries (Laos, Kampuchea) or countries with a socialist orientation; the only significant recipients outside this group are India, Egypt, Turkey.

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[19] This is particularly the case of Poland (see Barankiewicz, 1982, p. 11). The author of the article states the fact, and criticizes it on the grounds that (a) lack of adequate supplies creates bottlenecks in production, and (b) the DC might react in reducing their own imports.

[20] The last one was issued in June 1983: "Economic Assistance by CMEA Countries."

[21] *L'Observateur de l'OCDE*, N 122, May 1983: "Aide: les autres groupes de donneurs."

Thus, following these estimates, one may conclude that the CMEA Six primarily leave the burden of aid to the Soviet Union. The GDR, as the most developed country in Eastern Europe, helps the Soviet Union in this assistance; one must remember that it also has the biggest share, after the USSR, of trade with the CSOs.

For the first time, in 1982, the representative of the Soviet Union in the Economic and Social Council of the United Nations stated that if Soviet developmental assistance was computed according to Western criteria, it would amount to 1 percent of GNP on the period 1976–1980.[22] At the UNCTAD VI meeting Belgrade similar statements were made by several Eastern European countries: GDR (claiming for 1982 a total amount of economic assistance amounting to 0.79 percent of its national income); Czechoslovakia (0.74 percent for the same year); Bulgaria (0.79 percent).[23]

How should the gap between these figures and those of the OECD which are at approximately a five to one ratio be bridged? First, one has to note that the East European data are much more balanced than the Western data: the GDR's share (in percentage of national income) is equal to that of Bulgaria, and slightly higher than that of Czechoslovakia, and the GDR does not appear as a more generous donor than all other partner in the CMEA. Secondly, these statement would mean that the forms of assistance other than credits amount to a much greater sum. These forms include: grants, services by experts from socialist countries, aid in training students from developing countries, price preferences and transport concession.[24] Two of them—technical assistance and price preferences will be discussed in more detail.

It is very difficult, if not impossible, to assess the amount of technical assistance granted by the Eastern European countries. The exact number of specialists sent to developing countries, or of the students and technicians trained in Eastern Europe, are not available; neither is the distribution of the students who are granted scholarships from the CMEA special fund created in 1973. However, an article by I. Dobozi [25] provides some quantitative elements (following USSR, Romania would appear as the most generous in number of experts sent to developing countries, and in number of foreign students trained), and also qualitative assistance analysis. Thus, the CMEA countries' specialists would be considerably "cheaper" than those from developed countries. In CMEA countries, the study of students from developing countries is totally supported when scholarships are granted, and "these favorable traits of cooperation in education between the two groups of countries add up to savings of several hundred million dollars per year for the developing countries on expenditure on the training of, and provision of specialists."[26]

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[22] ECOSOC E/1982/86, 12 July 1982, pp. 4. A study by the British Foreign Office, which has not been made public, completed in May 1983, has evaluated these Soviet statements. (International Herald Tribune and New York Times, 4 January 1984).

[23] Documents of the VI UNCTAD, TD/304, 14 June 1983; TD 301, 10 June 1983; TD 291, 7 June 1983.

[24] UNCTAD, Review of trends and policies in trade between countries having different economic and social systems, 1 September 1983, TD/D/965, par. 62.

[25] Dobozi (1982), in "Development and Peace," vol. 3 n 1, pp. 158–9.

As for price preferences, the only indisputable case is that of Soviet-Cuban trade in sugar and oil. Otherwise the CMEA countries do not seem to grant preferences through import prices. An examination of UNCTAD unit value statistics for the commodities covered by the Comprehensive Program shows that in the recent years Eastern Europe (the Six) has paid for sugar, tea, coffee, agricultural raw materials (jute, cotton) prices generally in line with the world level; for meat and wheat, significantly lower prices, as well as for mineral raw materials (phosphate rock, manganese, tin, iron ore, bauxite).[27]

On the contrary, before 1973-74, the prices paid were generally above those of the world market. But such data must be treated with great care with the biases linked with unit values; one must take into consideration that prices paid for imports are related to export prices (mainly of machinery) for which information is lacking. Also, quality consideration, countertrade, may provide additional biases or offsets.

What the East European countries are claiming is therefore mainly an acknowledgement of the various forms of assistance which they provide in addition to direct credits. The latter are increasingly difficult for the smaller CMEA countries to grant especially in hard currencies, as is requested by the developing countries. A Soviet author suggested in 1980 that this obstacle might be overcome by a closer cooperation within the CMEA, and with oil-exporting countries (which might grant financial aid that would allow the East European countries to provide equipment or turnkey plants to other developing countries).[28]

VII. Intra-CMEA Division of Labor for Development Assistance

Is there a division of labor between East European countries in the field of economic assistance? Cooperation with the developing countries seems indeed to display, especially in recent years, some coordination between the recipients of various types of assistance and the countries of assistance origin.

The CSOs and especially the core "Five" (Afghanistan, Angola, Mozambique, Ethiopia, Yemen) clearly are to be included in such coordinated effort. At the 36th Session of the CMEA in Budapest (June 1982), the Soviet Prime Minister N. Tikhonov suggested that "the CMEA might conclude, with the interested countries with socialist orientation general agreements fixing the rules and principles of their relations, and providing them development assistance from the members of the CMEA, with measures aimed at the gradual extension of their links with our community."[29] At the 37th Session in Berlin (October 1982) a general agreement was indeed signed with Nicaragua, perhaps this might be considered as a beginning. However, the unsuccessful application of Mozambique to the CMEA membership in 1981 shows a clear reluctance on the part of the present members to accept the enlargement of the socialist community. Taking into account the heavy burden represented by assistance to Vietnam and Cuba, one may indeed doubt that further expansion would be feasible, in view of the domestic difficulties experienced by the Eastern European countries.

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[26] Ibid., p. 159.

[27] These data may be obtained from UNCTAD.

[28] L. Zevin, ed. (1980) pp. 162-163.

[29] Ekonomicheskaia Gazeta, n° 25, 1982, p. 10.

The sectoral division of labor, according to the areas of cooperation, is not only highly advocated but also visible through detailed analysis. For instance, in Africa: GDR supplies lorries, Hungary buses; Romania is active in geological exploration; Poland develops cooperation in the fishery sector; Bulgaria assists several African countries (Congo, Ethiopia, Angola) in the agricultural sector. But this "division of labor" is mainly a consequence of the specialization at work within the CMEA, and does not express a common strategy.

Does such a strategy exist even as a general conception? The repeated and limited responses of the CMEA countries as a group (excepting Romania, however) to the claims of the "77" expressed at the IV, V and VI Unctad conferences show the reluctance of the socialist countries to be involved in the "North-South" dialogue as if they were economic equals of the North. This is also an explanation for the absence of a coherent view in the New International Economic Order (NIEO) debate. M. Paszynski puts it quite clearly: "the socialist countries' stand with respect to NIEO has so far been reduced to three essential components: general support for developing countries' demands addressed to developed capitalist countries; refusal to acknowledge the demands that the "Third World" puts to them; and the absence of a vision of global solutions for the grand problems of the world economy.[30]

It is generally assumed that the East European countries are not taking position on the NIEO issues so as to avoid conflicts with the Third World countries about their conceptions. This is true, but another reason, probably as important, is contrast between the conception of the Soviet Union and those of the CMEA Six. The political and ideological involvement of the Soviet Union in the Third World compels it to transcend purely economic interests. The smaller CMEA countries, with the exception of the GDR and Romania (each for quite opposite reasons) are increasingly bound to consider mainly, if not exclusively, economic interests.

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[30] Paszynski (1980), p. 34.

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METHODOLOGICAL APPENDIX

The data used in the text and the tables are taken from the Databank CRIES (Calculs sur les Relations Internationales des Economies Socialistes) of the Center for international economics of socialist countries (Nov. 1983 edition). The figures have been computed on the basis of the official foreign trade statistics of seven countries (USSR; Bulgaria, Czechoslovakia, GDR, Hungary, Poland, Romania). For the conversion in dollars, the average annual conversion rates published in the Monthly Bulletin of Statistics (UN) have been used (except for Romania 1981, where the new exchange rate of 1 leu = 0.06667 has been used instead of the obviously incorrect rate of 0.22371 published in the Bulletin)

No mirror statistics have been used, because of the major discrepancies between the Eastern European data and those of the partner countries or of international organizations (the latter being also contradictory among themselves, in coverage and in magnitude).

The partner countries in the Third World are taken according to the classification of the Eastern European countries. These definitions do not consider as belonging to the Third World countries belonging to the socialist community (Cuba, Mongolia, Vietnam, CMEA members; Laos, North Korea). Hungary does not consider Turkey as belonging to the Third World. For reasons of consistency we had added Turkey to the amount of Hungarian trade with the Third World.

The partner countries identified in the statistical yearbooks are rather stable for each country in number. This number is however quite different from one country to the other (Bulgaria records in average 65 partners; Czechoslovakia 60; GDR 30; Hungary 75; Poland 50; Romania 42; USSR up to 70 in the seventies, 51 in 1982).

Specific mentions have to be made for:

Bulgaria: this country does not mention oil imports from 1979 on; in consequence partners from which it imports exclusively oil disappear from the commodity section of the foreign trade yearbook on the import side (Libya for instance).

GDR: the data for individual countries are only given for total trade, exports and imports added, since 1975. Only the balance for total trade with the Third World is given for GDR in the CMEA Statistical Yearbook. For this reason, line 2 is missing for GDR in table II, and line 4 sums up exports and imports.

Hungary: the change in the exchange rate of the forint, which occurred in 1976, introduced an upward bias in the statistical data (see text).

Apart in the first section of the article, no systematic comparison has been made between the geographic and commodity composition of trade with the Third World between the Six and the USSR. Any such comparison should take into account a well-known peculiarity of the Soviet statistics: the exports to the Third World show a high residual (both in the share of exports to identified countries in total exports to the Third World, and in the share of identified commodities in total exports). This residual is generally assumed to be mostly arms exports. For the Six, no residual of this type and magnitude appears. There is however, probably an arms trade between some of the Six and the developing countries; lacking original sources we have disregarded this point.

For the geographical pattern of trade, we have used a classification of Third World countries which is explained in text (III, A) and appears in Table III.

For the commodity pattern, we have used the data published in UN sources (Monthly Bulletin of Statistics), globally and by areas (Africa, total; Latin America, comprising only countries of the Latin American Integration Association, formerly Latin American Free Trade Association, which accounts for about 90-95% of trade with Latin America, Cuba excluded; Asia, without Middle East). The original sources could not be used here because two countries only, Czechoslovakia and Hungary, publish a coherent composition of trade in value, according to the SITC classification. Thus, we have relied upon the UN sources, which suffer from internal inconsistencies and obviously do not cover total trade with the developing countries.

TABLE I.—TRADE WITH DEVELOPING COUNTRIES: SHARES OF THE U.S.S.R. AND EASTERN EUROPE IN TOTAL TRADE

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Eastern Europe (million dollars):														
Exports	1,261	1,375	1,541	1,869	3,153	3,942	4,174	5,103	5,875	7,014	8,602	10,412	10,762	9,386
Imports	1,013	1,148	1,221	1,633	2,969	2,980	3,624	4,199	4,574	6,499	8,982	6,926	6,697	6,778
Eastern Europe, U.S.S.R. (million dollars):														
Exports	3,300	3,405	3,963	5,855	7,631	8,530	9,135	12,350	14,277	16,618	19,183	22,405	24,769	23,544
Imports	2,285	2,460	2,849	3,995	6,119	7,137	7,345	8,264	8,727	11,363	16,829	17,707	15,935	16,443
Shares (percent) in total trade:														
U.S.S.R.:														
Exports	61.9	59.6	61.1	68.1	58.7	53.7	54.3	58.7	58.8	57.8	52.2	53.5	56.5	60.1
Imports	55.7	57.4	57.2	59.1	51.5	58.2	50.7	49.2	47.6	42.8	46.2	60.9	59.8	58.8
Bulgaria:														
Exports	3.9	4.3	4.2	4.1	6.2	5.9	5.4	5.4	5.8	6.0	7.2	8.8	7.9	6.7
imports	3.8	4.9	4.7	4.1	5.2	3.1	3.4	3.5	.1	2.6	2.2	4.0	4.2	4.7
Czechoslovakia:														
Exports	10.4	11.8	10.6	7.8	8.0	8.4	7.5	6.8	8.7	6.2	6.7	6.1	5.3	6.3
Imports	9.9	9.3	9.9	10.0	9.0	7.1	6.9	8.9	7.0	6.2	4.9	4.2	4.1	4.1
German Democratic Republic:														
Exports	5.8	6.5	5.7	4.9	4.8	5.2	5.5	4.6	5.3	5.1	6.5	6.1	7.3	6.6
Imports	8.3	7.5	5.7	5.9	8.8	6.3	8.6	8.8	9.5	6.7	7.0	4.3	5.9	6.5
Hungary:														
Exports	4.1	4.1	4.4	3.6	4.3	4.3	4.3	4.1	4.2	4.8	4.4	4.5	4.6	4.8
Imports	7.8	6.4	6.8	6.4	6.9	7.0	7.1	7.8	8.0	6.2	5.0	4.3	5.5	6.8
Poland:														
Exports	8.3	8.1	7.5	5.6	8.7	10.3	10.0	8.4	7.2	7.8	8.6	6.9	6.2	5.9
imports	8.9	8.7	8.9	7.6	8.2	8.5	9.0	8.5	9.3	12.1	10.6	5.3	3.5	4.3
Romania:														
Exports	5.6	5.6	6.6	6.0	9.3	12.1	13.0	12.0	9.9	12.3	11.4	14.7	12.1	9.4
Imports	5.7	5.6	6.3	6.9	10.3	11.3	15.3	13.4	15.5	23.3	23.5	18.3	17.4	14.9
Total 7 countries:														
Exports	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Imports	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note.—Eastern Europe: the Six (Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania).

Source: Databank CRIES.

TABLE II.—TRADE BETWEEN THE INDIVIDUAL EUROPEAN CMEA COUNTRIES AND THE DEVELOPING COUNTRIES

		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
	Bulgaria:													
1.	Exports	129.9	147.0	165.9	237.7	472.6	504.3	496.1	661.6	834.5	998.5	1,387.5	1,815.9	1,982.2
	Imports	86.2	119.9	135.1	163.7	318.4	222.3	250.0	288.5	268.0	296.1	377.1	484.8	712.7
	Balance	43.7	27.1	30.8	74.0	154.2	282.0	246.1	373.1	399.0	702.4	1,010.4	1,331.1	1,269.5
2.	Exports	117.9	129.6	163.5	236.4	468.5	502.1	494.2	659.7	832.9	997.8	1,394.8	1,817.2	1,979.6
	Imports	50.1	76.3	132.0	160.6	314.1	220.5	246.2	275.3	256.2	290.5	367.6	473.2	701.8
	Balance	67.8	53.3	31.5	75.8	154.4	281.6	242.0	384.4	576.7	707.3	1,027.2	1,344.0	1,277.8
3.	Exports	6.5	6.7	6.3	7.2	12.3	10.7	9.2	10.4	11.2	11.3	13.4	17.5	17.2
	Imports	4.7	5.7	5.3	5.0	7.4	4.1	4.4	4.5	3.5	3.5	3.9	4.6	6.1
4.	Exports	90.7	88.2	98.5	99.5	99.1	99.6	99.6	99.7	99.8	99.9	100	100	99.9
	Imports	58.1	63.7	97.6	98.1	98.6	99.2	98.5	95.4	95.6	98.1	97.5	97.6	98.5
5.	Exports	100	113	127	183	363	388	381	509	642	768	1,068	1,398	1,525
	Imports	100	139	157	190	369	258	289	334	311	343	437	562	826
	Czechoslovakia:													
1.	Exports	341.9	401.5	420.2	454.7	609.3	719.9	681.7	840.5	1,241.5	1,024.3	1,285.8	1,376.1	1,315.9
	Imports	226.2	229.6	281.9	400.4	551.9	504.5	507.4	731.9	606.9	706.0	828.2	740.8	683.0
	Balance	115.7	171.9	138.3	54.3	57.4	215.4	174.3	108.6	634.6	318.3	457.6	635.3	632.9
2.	Exports	323.3	333.0	367.4	425.5	577.6	682.6	659.0	802.3	935.5	961.5	1,254.6	1,350.5	1,296.9
	Imports	220.7	212.5	272.1	398.9	535.8	475.9	498.2	710.4	589.1	686.0	818.6	728.2	668.0
	Balance	102.6	120.5	95.3	26.6	41.8	206.7	160.8	91.9	346.4	275.5	436.2	622.3	628.9
3.	Exports	9.0	9.6	8.5	7.5	8.6	8.6	7.5	8.2	10.1	7.8	8.6	9.3	8.4
	Imports	6.1	5.7	6.0	6.5	7.3	5.6	5.2	6.5	4.8	4.9	5.5	5.1	4.4
4.	Exports	94.6	82.9	87.4	93.6	94.8	94.8	96.7	95.5	75.4	93.8	97.6	98.1	98.6
	Imports	97.5	92.6	96.5	99.6	97.1	94.3	98.2	97.1	97.1	97.2	98.8	98.3	97.8
5.	Exports	100	177	123	133	178	210	199	246	363	300	376	402	385
	Imports	100	101	125	177	244	223	224	324	268	312	366	327	302
	German Democratic Republic:													
1.	Exports	192.2	222.6	224.1	287.9	367.6	443.8	499.7	571.3	754.3	842.8	1,245.3	1,362.9	1,810.2
	Imports	189.1	185.6	162.0	234.5	542.5	451.6	633.3	724.1	832.8	766.0	1,183.1	763.9	972.0
	Balance	3.1	37.0	62.1	53.4	−174.9	−7.8	−133.6	−152.8	−78.5	76.8	62.2	599.0	838.2

3. Exports	4.2	4.4	3.6	3.8	4.2	4.4	4.4	4.8	5.7	5.7	7.2	7.0	8.0
Imports	3.9	3.7	2.7	3.0	5.6	4.0	4.8	5.0	5.4	4.8	6.2	3.8	4.6
4. Exports	90.6	93.9	94.0	94.7	92.6	95.5	92.0	94.0	85.2	90.5	85.7	85.8	88.0
Imports													
5. Exports	100.0	115.0	117.0	150.0	191.0	231.0	260.0	297.0	393.0	438.0	648.0	720.0	942.0
Imports	100.0	98.0	86.0	124.0	287.0	239.0	334.0	383.0	440.0	405.0	626.0	410.0	514.0
Hungary:													
1. Exports	136.7	138.8	174.3	211.4	324.7	363.9	392.3	500.7	595.8	805.0	849.6	1,017.7	1,138.7
Imports	177.4	158.6	193.0	255.2	424.7	498.2	523.3	646.8	698.2	705.4	847.2	755.2	904.7
Balance	−40.8	−19.8	−18.7	−43.8	−100.0	−134.3	−130.9	−146.1	−102.4	99.6	2.4	262.5	234.0
2. Exports	141.0	141.8	170.3	206.9	316.6	374.0	418.0	516.3	594.3	783.0	936.8	1,046.9	1,147.5
Imports	183.6	170.0	198.4	264.2	446.8	508.3	538.3	671.5	692.8	731.3	906.2	772.5	909.7
Balance	−42.6	−28.2	−28.1	−57.3	−130.2	−134.2	−120.3	−155.2	−98.5	51.7	30.6	274.4	237.8
3. Exports	5.9	5.5	5.1	4.8	6.3	5.9	8.0	8.6	9.3	10.9	11.0	11.7	12.9
Imports	7.1	5.3	6.0	6.5	7.6	6.9	9.5	9.9	9.2	8.1	9.4	8.3	10.2
4. Exports	103	102	97.7	97.8	97.5	102.8	106.5	103.1	99.8	97.3	98.3	102.9	100.7
Imports	103	107	102.8	103.5	105.2	102	102.9	103.8	99.2	103.7	104.6	102.3	100.6
5. Exports	100	102	127	155	237	266	287	366	435	589	696	744	832
Imports	100	89	108	144	239	281	295	365	393	399	488	426	510
Poland:													
1. Exports	274.7	274.3	297.1	326.0	666.8	879.2	913.9	1,040.8	1,030.9	1,292.2	1,644.2	1,537.6	1,545.2
Imports	204.2	215.1	252.5	305.4	503.6	609.4	588.4	698.9	812.4	1,371.5	1,785.4	946.2	596.3
Balance	70.6	59.2	44.5	20.6	163.2	269.8	325.5	341.9	218.5	−79.3	−141.2	591.4	948.9
2. Exports	260.5	240.4	278.0	303.1	614.5	783.7	854.2	894.6	870.2	1,079.8	1,311.8	1,173.7	1,231.0
Imports	196.0	210.5	246.7	302.6	499.4	591.7	585.2	674.7	806.1	1,342.5	1,747.9	923.9	589.9
Balance	64.5	29.9	31.3	.4	115.1	192.0	269.0	219.9	64.1	−262.7	−436.1	249.8	641.1
3. Exports	7.7	7.1	6.1	5.1	8.0	8.6	8.3	8.5	7.7	7.9	9.7	11.6	13.8
Imports	5.7	5.3	4.7	3.9	4.8	4.9	4.2	4.8	5.3	7.8	9.4	6.1	5.8
4. Exports	94.8	87.7	93.6	93.0	92.2	89.1	93.5	85.9	84.4	83.6	79.8	77.3	79.7
Imports	96.0	97.9	97.7	99.1	99.2	97.1	99.5	96.5	99.3	97.9	97.9	97.6	98.9
5. Exports	100	99.8	108	119	243	320	333	379	375	470	598	560	562
Imports	100	105.4	124	150	247	298	288	342	398	672	874	463	292

TABLE II.—TRADE BETWEEN THE INDIVIDUAL EUROPEAN CMEA COUNTRIES AND THE DEVELOPING COUNTRIES—Continued

		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
	Romania:													
1.	Exports	185.1	191.2	259.9	351.3	711.7	1,030.9	1,190.7	1,488.4	1,417.9	2,051.6	2,189.9	3,301.6	3,000.0
	Imports	129.4	138.8	196.2	274.0	627.5	694.4	1,121.6	1,108.8	1,355.6	2,654.1	3,960.8	3,235.1	2,840.6
	Balance	55.7	52.4	63.7	77.4	84.2	336.5	69.2	379.6	62.3	−602.5	−1,770.9	66.5	159.4
2.	Exports	158.5	164.8	218.9	291.7	628.4	970.2	1,109.2	1,226.9	1,220.9	1,776.1	2,159.5	3,233.9	2,550.3
	Imports	118.6	127.5	178.9	249.5	578.7	654.0	1,088.9	1,028.3	1,343.6	2,448.7	3,950.5	3,212.5	2,736.5
	Balance	39.9	37.2	40.0	42.2	49.7	316.2	20.3	198.6	−122.7	−672.6	−1,791.0	21.4	−184.3
3.	Exports	10.0	9.1	10.0	9.5	14.6	19.3	19.4	21.2	19.1	21.1	19.2	29.5	29.6
	Imports	6.6	6.6	7.5	7.9	12.2	13.0	18.4	15.8	16.5	24.3	30.0	29.4	34.1
4.	Exports	85.6	86.2	84.2	83.0	88.3	94.1	93.2	82.4	86.1	86.6	98.6	97.9	85.0
	Imports	91.7	91.9	91.2	91.1	92.2	94.2	97.1	92.7	99.1	92.3	97.7	99.3	96.3
5.	Exports	100	103	140	190	384	557	643	804	766	1,108	1,193	1,784	1,621
	Imports	100	107	152	212	485	536	867	857	1,047	2,051	3,062	2,500	2,196
	U.S.S.R.:													
1.	Exports	2,039.6	2,030.2	2,422.1	3,985.7	4,478.0	4,588.3	4,960.9	7,247.0	8,401.8	9,603.3	10,580.9	11,993.1	14,149.9
	Imports	1,272.9	1,411.9	1,628.5	2,361.4	3,150.6	4,156.9	3,720.7	4,064.8	4,154.0	4,863.8	7,847.4	10,781.2	9,316.9
	Balance	766.8	618.3	793.6	1,624.3	1,327.4	431.4	1,240.2	3,182.2	4,247.9	4,739.5	2,733.5	1,211.9	4,833.0
2.	Exports	1,241.4	1,330.1	1,357.3	1,840.0	2,452.3	2,707.1	2,642.1	3,365.0	4,187.3	5,259.8	5,798.7	6,999.6	7,580.4
	Imports	1,241.3	1,389.6	1,614.9	2,338.5	3,120.3	4,145.7	3,687.7	4,006.9	4,090.6	4,823.7	7,680.2	10,606.8	9,129.4
	Balance	0.1	−59.5	−257.6	−498.5	−668.0	−1,438.6	−1,045.6	−641.9	96.7	436.1	−1,881.4	−3,607.2	−1,549.0
3.	Exports	15.9	14.7	15.8	18.6	16.3	13.8	13.3	16.1	16.1	16.1	14.8	13.8	15.2
	Imports	10.9	11.3	10.1	11.2	12.7	11.2	9.8	10.0	8.2	8.4	11.5	14.8	11.9
4.	Exports	60.9	65.5	56.1	46.2	54.8	59.0	53.3	46.4	49.8	54.7	54.8	58.4	53.6
	Imports	97.5	98.4	99.2	99.0	99.0	99.7	99.1	98.6	98.5	99.2	97.9	98.4	98.0
5.	Exports	100	99	119	195	219	225	243	355	412	471	519	588	694
	Imports	100	110	128	185	247	327	292	319	326	382	617	847	732

Note.—For each country: 1. Total trade with the developing countries (million dollars); 2. Trade with the identified countries in the Third World (million dollars); 3. Share of total trade with the developing countries in the total trade with the world (in percent); 4. Share of trade with identified developing countries in the total trade with the developing countries. (in percent); 5. Index of growth (1970=100) by total trade by exports and imports (line 1).

TABLE III.—MAIN GROUPS OF PARTNERS IN TOTAL TRADE OF EASTERN EUROPE WITH THE THIRD WORLD

[Shares, in percentage]

	Asia		Latin America		Africa (total)		Africa (tropical)		CSO (subgroup 1)		CSO (subgroup 2)		OPEC		NIC's		Middle East	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Bulgaria:																		
1970	57	41	1	3	41	57	4	11	0	0	24	23	31	20	0	3	69	66
1975	58	40	1	19	42	41	10	2	0	0	22	15	65	20	1	22	77	55
1981	56	68	1	10	43	22	4	6	2	1	29	9	68	29	1	7	83	58
Czechoslovakia:																		
1970	56	44	9	27	34	29	5	5	1	1	21	24	23	10	6	11	62	38
1975	55	39	13	27	33	34	4	3	1	1	24	9	44	16	8	17	69	47
1981	58	44	11	46	31	10	4	3	3	3	31	4	46	16	7	38	69	21
German Democratic Republic:																		
1970	...	39	...	26	...	34	...	2	...	2	...	10	...	9	...	18	...	50
1975	...	55	...	16	...	21	...	1	...	0	...	35	...	33	...	11	...	68
1981	...	46	...	22	...	32	...	14	...	10	...	23	...	38	...	19	...	51
Hungary:																		
1970	58	44	9	31	33	25	8	8	0	0	10	6	25	17	7	19	61	39
1975	66	49	12	26	22	24	4	12	0	0	28	32	54	38	5	18	74	46
1981	63	42	6	41	31	17	9	9	2	0	33	5	62	26	5	36	75	29
Poland:																		
1970	49	43	18	29	33	28	7	5	0	0	13	4	22	7	13	21	53	32
1975	51	36	18	22	31	41	4	4	0	0	14	7	41	11	17	17	53	44
1981	49	28	16	61	35	11	8	0	3	0	20	0	47	13	13	59	64	27
Romania:																		
1970	59	61	6	15	35	24	2	1	0	0	7	5	40	24	4	25	77	48
1975	62	57	8	8	29	36	3	1	0	0	18	11	46	57	8	8	73	81
1981	75	69	3	7	22	24	3	7	1	0	37	18	56	72	3	5	86	80
U.S.S.R.:																		
1970	53	50	1	6	47	43	5	7	4	3	16	7	30	15	1	5	76	46
1975	63	45	7	26	30	30	7	8	4	2	26	18	37	27	6	20	61	44
1981	75	45	2	40	23	15	10	4	14	5	27	6	37	13	2	39	55	23

Source: Databank CRIES.

TABLE IV.—RANKING OF INDIVIDUAL DEVELOPING COUNTRIES IN EXPORT AND IMPORT TRADE OF EASTERN EUROPE WITH THE THIRD WORLD, 1970, 1975, 1981

	Bulgaria						Czechoslovakia						German Democratic Republic				
	1970		1975		1981		1970		1975		1981		1970		1975		1981
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports-	Imports	Exports	Imports	Exports	Imports	Exports + Imports
Egypt	1	1	7	1		9	1	1	3	1	4	7	1	1	2	2	8
India	2	2	6	2	3	5	2	2	4	3	5	2	2	2	3	4	4
Iran	9		3		4	2	6	7	6	4	6	3		7	8	10	3
Iraq	3		2	7	2		3		1	8	2		5		1	1	1
Libya	7		1	8	1	1			2		1						5
Algeria	6	3		4	6						10		7		6		10
Brazil				3			9	4	8	2		1	3	3	5	3	2
Morocco		8		5		3		10		6				10		8	
Syria	8	4	10		7	8	4		5		3	8	4	8	4	6	6
Turkey		5	5	6	5	4	8	6	10			10	6	6	7	7	
Argentina		9		10				8		9		4					
Colombia												9	8	5		9	
Ecuador																	
Indonesia			8									6					
Ivory Coast						10											
Jordan					10												
Kuwait																	
Lebanon	5	10	9		8		7		7		7		9	9	9		
Malaysia						7		5		5		5					
Nigeria	10	6	4		9		10										
Pakistan	4					6	5										
Peru								3		7				4		5	
Saudi Arabia											9						
Singapore				9													
Tunisia		7								10							

	Hungary						Poland						Romania					
	1970		1975		1981		1970		1975		1981		1970		1975		1981	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
Egypt	1	3	5	6	10		2	3	10	4	7	8	2	2	4	2	3	9
India	2	1	3	3	7	4	1	1	1	2	9	3	4	3	5	6	7	10
Iran	4	5	2	4	2	3		10	4		5	2	1	1	1	1	2	1
Iraq	10		1	1	1		3		5		2				6		1	3
Libya			7		3		9		2		1		5		2	3	5	4
Algeria				5	4				7	5	6		7	8	10	5		
Brazil	6	2		2		1	4	4	3	3	3	1	8	7		7	10	8
Morocco							7	7	9	1	8	4				8		
Syria	8	9		8	6										7	9	8	5
Turkey	3	4	4			8	5	8	8		4	6	6	9	8		4	
Argentina		7					8	5		6		5		6				
Colombia							10					7		10				
Ecuador		10		10		9												
Indonesia						6			6						9			
Ivory Coast						5												
Jordan												9				9		
Kuwait			8		8											4		7
Lebanon	5		6		9									3		6		
Malaysia		8		9		7				10								
Nigeria	9				5													6
Pakistan	7					3	6	2		8	10		10	5				
Peru		6						6		7								
Saudi Arabia																		2
Singapore														4		10		
Tunisia										9								

Source: Databank CRIES

TABLE V.—TRADE OF THE SIX WITH THE DEVELOPING COUNTRIES, TOTAL, COMMODITY COMPOSITION

[In percent of total trade]

	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Exports:												
0+1	10.3	9.3	9.7	14.4	12.5	12.9	13.7	14.1	13.8	13.8	12.8	13.7
2+4	3.0	3.6	3.9	3.7	3.1	3.4	4.6	4.4	4.1	4.1	7.3	6.9
3	2.6	2.3	2.7	2.6	3.6	4.0	4.0	2.9	3.0	2.5	6.7	4.1
5	8.3	9.0	8.3	9.5	11.6	9.6	9.8	9.9	11.1	11.8	10.6	10.0
6+8	30.4	31.9	32.0	32.5	27.8	28.7	28.0	20.9	28.9	28.3	26.1	24.8
7	42.7	42.7	41.4	36.5	40.5	41.9	39.5	39.8	38.7	38.8	33.4	32.0
0–4	15.9	15.2	16.3	20.7	19.2	20.4	22.3	21.4	20.9	20.4	26.8	24.6
5–8	81.4	83.6	81.7	78.5	79.9	79.6	77.3	70.6	78.7	78.9	70.1	66.8
Residual	2.4	1.2	2.0	.8	.9	0	.4	8.0	.4	.7	3.1	8.6
Imports:												
0+1	35.8	32.5	34.6	28.7	24.3	26.9	34.4	30.1	25.7	25.7	26.4	19.2
2+4	40.5	31.0	30.5	31.4	27.6	23.3	21.3	22.2	22.4	20.1	16.2	13.8
3	4.7	17.3	17.5	24.9	34.2	38.1	32.5	36.5	39.4	43.3	45.9	59.8
5	2.2	1.8	1.5	1.6	.7	.6	.7	.9	1.1	1.1	1.9	1.0
6–8	16.0	16.5	14.7	13.1	11.2	10.4	10.8	10.1	10.6	9.3	7.9	5.6
7	.3	.8	1.0	.4	.6	.4	.3	.3	.2	.2	.4	.2
0–4	81.0	80.8	82.6	85.0	86.1	88.3	88.2	88.8	87.5	89.1	88.5	92.8
5–8	18.5	19.1	17.2	15.1	12.5	11.7	11.8	11.3	11.9	10.6	9.7	6.8
Residual	.5	.1	.2	0	1.4	0	0	0	.6	.3	1.8	4

Note.—Percentages of total trade are computed on the sum of SITC 0 to 9.

SITC classes: 0. Food and live animals. 1. Beverages and tobacco. 2. Crude materials, inedible, excluding fuels. 3. Mineral fuels, lubricants. 4. Animal/vegetable oils and fats. 5. Chemicals. 6. Manufactured goods by chief material. 7. Machinery and transport equipment. 8. Miscellaneous manufactured goods. 9. Items not classified.

Sources: Monthly Bulletin of Statistics, August 1976, June 1978, May 1979, May 1982, May 1983, May 1984.

TABLE VI.—TRADE OF THE SIX WITH THE DEVELOPING COUNTRIES OF ASIA (MIDDLE-EAST EXCLUDED), COMMODITY COMPOSITION

[In percent of total trade]

Years	0+1	2+4	3	5	6+8	7	0−4	5−8	Residual
Exports:									
1970	4.9	0.4	3.8	19.0	20.9	50.6	9.1	90.5	0.4
1972	1.8	2.5	3.6	22.4	22.4	46.1	7.9	90.6	1.5
1973	2.6	2.9	4.9	20.2	22.8	45.3	10.4	88.3	1.3
1974	7.0	3.4	4.4	18.5	25.8	40.1	14.8	84.4	.8
1975	5.2	1.9	5.3	30.5	21.9	34.4	12.5	86.8	.8
1976	4.3	1.4	7.4	22.9	22.1	41.0	13.2	86.0	.8
1977	3.8	2.0	0	28.4	23.0	42.5	5.8	93.9	.3
1978	3.8	1.9	0	30.7	22.1	38.1	5.7	90.9	3.4
1979	4.3	2.0	.1	32.2	22.7	38.1	6.5	93.0	.5
1980	3.4	1.9	.1	34.1	22.5	36.9	5.4	93.5	1.1
1981	1.3	3.0	0	28.2	37.2	30.2	4.3	95.6	.1
1982	2.1	.9	0	32.3	32.2	31.2	3.0	96.6	.3
Imports:									
1970	24.0	43.2	.7	.7	30.6	.7	67.9	32.1	0
1972	23.1	35.6	1.7	.7	36.1	2.0	60.4	39.3	.3
1973	26.2	39.2	1.9	1.1	29.8	2.2	67.1	32.9	0
1974	25.7	37.4	2.5	.8	32.3	.8	65.6	34.0	.4
1975	25.1	36.1	1.7	.4	33.9	1.3	62.9	35.6	1.5
1976	27.4	40.0	1.4	.2	31.7	1.2	68.8	33.1	1.9
1977	25.4	36.1	2.0	.9	33.9	1.2	63.5	35.9	.6
1978	19.5	47.9	2.9	.4	27.9	1.3	70.3	29.5	.2
1979	17.4	47.0	.2	.3	30.9	1.2	64.5	32.5	3.0
1980	16.8	43.3	.1	.4	34.8	1.7	60.2	36.5	3.3
1981	21.3	39.5	3.0	3.0	30.5	1.0	63.8	31.9	4.3
1982	20.1	35.3	.8	.6	35.7	1.7	56.2	38.0	5.8

Note.—Percentages of total trade are computed on the sum of SITC 0 to 9.

SITC classes: 0. Food and live animals. 1. Beverages and tobacco. 2. Crude materials, inedible, excluding fuels. 3. Mineral fuels, lubricants. 4. **Animal/vegetable** oils and fats. 5. Chemicals. 6. Manufactured goods by chief material. 7. Machinery and transport equipment. 8. Miscellaneous **manufactured goods**. 9. Items not classified.

Sources: Monthly Bulletin of Statistics, August 1976, June 1978, May 1979; May 1982, May 1983, May 1984.

TABLE VII.—TRADE OF THE SIX WITH THE DEVELOPING COUNTRIES OF AFRICA, COMMODITY COMPOSITION

[In percent of total trade]

Years	0+1	2+4	3	5	6+8	7	0−4	5−8	Residual
Exports:									
1970	12.4	1.9	3.6	7.1	29.0	41.7	17.9	77.9	4.3
1972	11.8	5.3	2.4	6.1	28.2	44.7	19.4	79.0	1.6
1973	12.7	6.4	3.9	6.8	30.2	37.3	23.0	74.3	2.7
1974	21.0	4.6	1.7	8.6	31.5	31.6	27.3	71.7	.9
1975	19.1	3.7	1.3	8.7	29.1	37.0	24.1	74.8	1.1
1976	19.7	3.8	1.3	9.0	31.8	33.2	24.8	73.9	1.3
1977	20.2	7.6	1.8	9.2	30.3	30.7	29.6	70.2	.2
1978	19.3	6.9	1.6	9.1	21.1	34.0	27.8	64.2	8.0
1979	19.8	6.9	1.7	9.0	30.0	32.0	28.5	71.0	.5
1980	19.2	6.6	1.6	9.7	29.9	32.4	27.4	71.9	.7
1981	19.1	6.0	.8	8.6	25.8	37.0	25.9	71.3	2.8
1982	17.9	6.2	.7	8.2	25.8	39.7	24.9	73.7	1.4
Imports:									
1970	22.6	49.8	7.4				79.9	20.1	0
1972	19.4	39.3	23.8				82.5	17.1	.4
1973	24.2	37.1	26.0				87.3	12.7	0
1974	21.0	54.9	12.8				88.6	11.4	0
1975	16.7	51.9	21.2				89.9	9.6	.5
1976	18.7	38.4	34.2				91.3	8.6	.1

TABLE VII.—TRADE OF THE SIX WITH THE DEVELOPING COUNTRIES OF AFRICA, COMMODITY COMPOSITION—Continued

[In percent of total trade]

Years	0+1	2+4	3	5	6+8	7	0–4	5–8	Residual
1977	22.3	42.4	19.3				90.0	9.9	.1
1978	21.4	31.4	37.6				90.4	9.4	.2
1979	8.9	29.8	52.8				91.5	8.5	0
1980	19.9	23.4	52.7				96.0	4.0	0
1981	26.2	19.1	50.7				96.0	4.0	
1982	10.9	11.0	76.3				98.3	1.7	0

Note.—Percentages of total trade are computed on the sum of SITC 0 to 9.

SITC classes: 0. Food and live animals. 1. Beverages and tobacco. 2. Crude materials, inedible, excluding fuels. 3. Mineral fuels, lubricants. 4. Animal/vegetable oils and fats. 5. Chemicals. 6. Manufactured goods by chief material. 7. Machinery and transport equipment. 8. Miscellaneous manufactured goods. 9. Items not classified.

Sources: Monthly Bulletin of Statistics, August 1976, June 1978, May 1979, May 1982, May 1983, May 1984.

TABLE VIII.—TRADE OF THE SIX WITH THE DEVELOPING COUNTRIES OF LATIN AMERICA, COMMODITY COMPOSITION

[In percent of total trade]

Years	0+1	2+4	3	5	6+8	7	0–4	5–8	Residual
Exports:									
1970	6.4	5.7	2.8	6.4	40.4	37.6	14.9	84.4	0.7
1972	9.1	.6	4.0	7.4	41.1	37.7	13.7	86.3	0
1973	6.6	.6	2.2	8.3	33.7	45.9	9.4	87.8	2.8
1974	6.7	.8	11.0	10.6	33.7	37.3	18.4	81.6	0
1975	3.7	.7	18.3	10.0	22.2	44.5	22.7	76.8	.5
1976	3.3	.8	21.4	11.6	22.7	39.4	25.5	73.7	.8
1977	2.8	.2	20.0	9.3	15.3	52.4	23.0	77.0	0
1978	4.1	.2	13.7	9.5	21.5	49.9	18.0	80.9	1.1
1979	2.4	.3	12.9	13.8	21.9	48.8	15.6	84.4	0
1980	2.3	.3	9.6	14.9	17.1	55.6	12.3	87.6	.1
1981	6.8	2.9	14.8	24.7	16.5	34.0	24.5	75.2	.3
1982	2.5	7.7	27.2	24.4	13.6	24.4	37.4	62.4	.2
Imports:									
1970	65.3	27.8	0	2.0	4.0		93.1	6.0	.8
1972	67.2	20.8	0	1.1	10.6	.4	87.9	12.1	0
1973	63.9	21.5	.7	.7	12.6	.7	86.0	14.0	0
1974	67.4	17.2	.7	.7	13.6	.3	85.3	14.7	0
1975	67.6	17.0	.7	1.8	12.3	.7	85.3	14.7	0
1976	68.8	16.8	.6	.6	13.1	.2	86.2	13.9	0
1977	77.1	12.4	1.4	.5	9.0	.4	90.5	9.5	0
1978	70.6	14.6	1.4	.6	12.7	.1	86.6	13.4	0
1979	65.5	18.4	1.6	1.5	13.0	.2	85.5	14.5	0
1980	61.5	21.7	.5	1.6	14.7	.1	83.6	16.4	0
1981	61.5	22.8	2.3	1.5	11.7	.1	86.6	13.4	0
1982	62.1	19.9	3.6	1.5	12.8	.2	85.6	14.4	0

Note.—Percentages of total trade are computed on the sum of SITC 0 to 9.

SITC classes: 0. Food and live animals. 1. Beverages and tobacco. 2. Crude materials, inedible, excluding fuels. 3. Mineral fuels, lubricants. 4. Animal/vegetable oils and fats. 5. Chemicals. 6. Manufactured goods by chief material. 7. Machinery and transport equipment. 8. Miscellaneous manufactured goods. 9. Items not classified.

Sources: Monthly Bulletin of Statistics, August 1976, June 1978, May 1979, May 1982, May 1983, May 1984.

TABLE IX.—CLEARING AGREEMENTS BETWEEN EASTERN EUROPEAN AND DEVELOPING COUNTRIES IN FORCE BEGINNING 1983

	Bulgaria	Czechoslovakia	German Democratic Republic	Hungary	Poland	Romania	U.S.S.R.
Afghanistan		x		x			x
Algeria							x
Bangladesh	x	x	x	z	x	x	x
Brazil	x		x	x	x	x	
Colombia	x			x	x	x	x
Congo	x						
Ecuador [1]	x		x	x	x	x	
Egypt							x
Ghana						x	
India		x	x		x	x	x
Iran	x	x	x	x	x	x	x
Lebanon [2]		x			x	x	
Mali [3]				x		x	x
Morocco [4]							x
Nepal					x		
Pakistan [2]	x	x		x	x		x
Peru					x		
Somalia							x
Syria							x
Turkey [2]						x	

[1] For most of the settlements.

[2] For certain settlements only.

[3] Nonworking agreements.

[4] Agreement expired on 31.12.81; in process of liquidation.

Source: IMF Yearbook on Exchange Restrictions (annual report 1983).

Note.—This study has been completed at a time when the trade of Eastern Europe with LDCs had probably reached its highest point. In 1983 the exports of the Six sharply declined (by 13 percent), and they seem to stagnate in 1984, while the imports slightly increased (by 1 percent) in 1983 (a stronger growth seems to have taken place in 1984). This is not enough to bring about a negative balance of trade; however, the surplus with the LDCs is gradually shrinking, still amounting to 2.6 billion dollars in 1983. The share of the Third World in total exports of the Six declined in 1983 by two points (from 13.5 to 11.4 percent) while its share in their total imports remained constant (8.9 percent).

COMPETITION BETWEEN EASTERN EUROPE AND DEVELOPING COUNTRIES IN THE WESTERN MARKET FOR MANUFACTURED GOODS

By Kazimierz Poznanski *

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The following analysis surveys the most recent trends in the competitiveness of Eastern Europeans exports of manufactured products to the West.[1] While trying to strengthen its position in western markets, Eastern Europe has met rapidly increasing competition from the newly industrializing countries (here: Argentina, Brazil, Mexico in Latin America, and Singapore, South Korea, Taiwan and Hong Kong in the Far East). Large-scale exports of manufactured goods by the newly industrializing economies have already put the Eastern Europeans in a difficult position. This threat from the group of newly industrializing countries is likely to intensify in the coming years, leaving even less room for additional exports by Eastern Europe and possibly forcing them to lower prices and accept reduced benefits from trade with the West.

The newly industrializing countries are likely to erode further the market position of Eastern Europe (and the Soviet Union as well) in the West, not primarily because of the recent shift in Eastern Europe toward import cuts and a no-borrowing policy, though these hurt its export potential. Much more important is the fact, documented below, that Eastern Europe has started losing its tradi-

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[1] Results of an early stage of this analysis were presented in K. Poznanski, New Dimension in International Trade: East-South Competition in the West, Department of Economics, Cornell University, December 1982.

tional technological edge over the group of newly industrializing countries over the last decade. In several industries, Eastern Europe seems already to have lost its lead, for example in steel, ships, and passenger cars, all major items of manufactured exports to the West. There is also some evidence that the newly industrializing economies may soon surpass Eastern Europe in technology for computers, complex chemicals (including drugs), aircraft, and other advanced products of which the region has not even begun to sell significant quantities in western markets.

This competitive threat puts the overall trade relations between Eastern Europe and the West in a completely new perspective. Up to now, the improvement in these relations has been seen primarily as a function of two factors, i.e., liberalization of import practices by western countries and a parallel removal of some procedural obstacles to trade operations by the state run enterprises in Eastern Europe. However, with the emergence of the strong competition from the newly industrializing countries those measures for liberalization of trade on both sides are unlikely to yield much benefit. What is now a real prerequisite of any significant improvement in Eastern Europe-West trade is the ability of Eastern Europe to strengthen its competitiveness relative to the newly industrializing countries. To accomplish that, systemic reforms covering more than just foreign trade procedures and going much beyond whatever has been done by any of the Eastern European countries (including Hungary) will be required.

I. Introductory Remarks on the Import-led Policy

A latest response by Eastern Europe (and the Soviet Union) to structural problems, including the falling rate of growth, declining productivity pace, and poor quality of products has been the so-called import-led policy begun in the late sixties (see: P. Hanson[2]). Most recent moves by Eastern European planners have moved the region away from this track, but it would be premature to conclude whether or not the region has completely abandoned the import-led policy. The essence of this policy has been to open Eastern Europe more widely to the pool of western technology through more intensive imports of machinery and equipment, coupled with more aggressive purchase of licenses. In addition, the import-led policy called for use of western credits to finance the bulk of increased purchases even at the risk of incurring heavy debts vis a vis the West (see: J. Montias[3]).

Particular Eastern European countries have varied not only in their commitment to western imports, but also in terms of the role assigned to western imports in their foreign trade policy. One can argue that countries such as Hungary, Poland, and Romania decided to use western imports to radically improve their competitive position in western markets. They expanded their western trade at the expense of the mutual trade with other Eastern Europeans and the Soviet Union (this applies particularly to Romania). Other countries have been more conservative, meaning that they intended to use western imports primarily to stimulate their intra-regional trade (particularly that with the Soviet Union) and to push exports on western markets only as far as dictated by balance-of-payments considerations.

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[2] P. Hanson, "The End of Import-Led Growth? Some Observations on Soviet, Polish, and Hungarian Experience in the 1970's," Journal of Comparative Economics, vol. 6, No. 2 (June, 1982).

[3] J.M. Montias, "Observations on Recent Trends in East-West Trade," Yale University, June 1983 (mimeograph), 1-2.

Eastern Europe decided to experiment with the import-led policy many years after a somewhat similar move was made by a number of Latin American and Far Eastern economies. Initially, some Far Eastern countries such as Singapore and Taiwan in the middle fifties, and then the three Latin American economies in the early sixties put in motion a policy of intensive borrowing of western technology and of using foreign financing to pay the bill. Singapore and Taiwan made this move with the clear-cut intention of promoting world-wide exports, seen as a major growth engine from the start. However, South Korea started the import-led policy with a domestic concern and only in the early seventies it decided to use western resources for export promotion. Countries like Argentina, Brazil, and Mexico originally insisted on using western technology and financing to replace foreign goods with domestic production, but in the middle seventies they also decided to balance their imports more with export promotion.[4]

Eastern Europe has not only been a latecomer, but it also made only a limited adjustment to prepare its economy for the opening to western countries, compared with the fundamental changes made by some of the newly industrializing countries. Eastern Europe, for instance, adopted international rules of patenting (at least for foreigners), and accepted commercial channels for technology transfer (i.e., licenses) as a routine process. Some other, rather minor changes have been made as well, but they left the core of the bureaucratic system unchanged, including the complete state monopoly in trade, nonconvertible currencies, and multiple exchange rates. Moreover, Eastern Europe has remained virtually closed to direct western investment even though some regulations allowing for such operations were promulgated by several countries in the region by the mid-seventies (see: J. Svejnar et al.[5]).

In contrast, the switch by the newly industrializing countries to an import-led policy was often accompanied by radical reforms. South Korea, for instance, after many years of bureaucratic regulation of its relations with the world economy, returned in the mid-fifties to an uniform exchange rate system and instituted almost full convertibility, simultaneously with elimination of most governmental intervention in trade.[6] In countries such as Brazil and Mexico, many formal obstacles to a free-trade mechanism were relaxed in the process of opening their economies to the world (e.g., some constraints on convertibility instituted shortly after World War II). Almost uniformly, the countries now called newly industrializing backed their import-led policies with a set of regulations encouraging foreign direct investment, Singapore being the most aggressive in this among Far Eastern countries, and Brazil and Mexico in Latin America.[7]

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[4] See more: R. B. Neves, "The Expansion of Manufactured Exports, "Bank of London South America Review, vol. 16, No. 11 (May 1982).

[5] J. Svejnar and S.C. Smith, "The Economics of Joint Ventures in Centrally Planned and Labor-Managed Economies," Journal of Comparative Economics, No. 6 (1982), 148-172. Also P. Marer, "Joint Ventures in Hungary," 1972-1983, School of Business, Indiana University, January 1984 (mimeograph).

[6] C.R. Frank, K.S. Kim, and L.E. Westphal, "Foreign Trade Regimes and Economic Development: South Korea," (New York: National Bureau of Economic Research, 1975).

Even this short review suggests that some kind of trade conflict between these two groups of countries on western markets was foreseeable, and that a substantially better performance by one of them could easily undermine the continuation of import-led policy by another. The following analysis determines whether a potential trade conflict has materialized, and projects trends in the exports of manufactured goods by both groups of countries to western economies. This comparison of export performance should also provide some grounds for judging the relative efficiency of particular variants of the import-led policy pursued by Eastern Europe on the one hand (i.e., reliance on licenses and turn-key projects) and the newly industrializing countries on the other (i.e., focus on foreign direct investment).

II. AGGREGATE ANALYSIS OF TRADE PERFORMANCE IN THE WEST

A. Changes in the Value of Exports

Both groups of countries reported substantial increases in their total sales to the West in the last decade, with the newly industrializing countries sharply exceeding the performance by Eastern Europe. Undeflated time series on total exports to the OECD countries show that Eastern Europe increased its sales from $3.5 billion in 1970 to $15.5 billion in 1981, or by 439 percent.[8] Despite the size of this increase, Eastern Europe was unable to widen its share of the OECD market, which instead dropped from 1.5 percent in 1970 to 1.2 percent in 1981, or by 0.3 points (Table 1). The growth index for the newly industrializing countries was 899 percent, with respective sales of $19.7 billion in 1970 and $87.2 billion in 1981.[9] This expansion of total exports was strong enough to allow the newly industrializing countries to increase their market share from 4.2 percent in 1970 to 6.7 percent in 1981, or by 2.5 points (Table 1).

TABLE 1.—MARKET SHARES OF EASTERN EUROPE AND THE NEWLY INDUSTRIALIZING COUNTRIES IN THE OECD TOTAL IMPORTS OF MAJOR MANUFACTURED GOODS—1970, 1980, 1981

[In percent]

	1970	1980	1981	1982	1983
1. Total (SITC-0 to 8):					
Eastern Europe	1.5	1.3	1.2	1.1	1.1
NIC total	4.2	5.7	6.7	6.8	8.1
Latin America	2.4	2.5	3.0	3.1	3.6
Far East	1.8	3.2	3.7	3.7	4.4
2. Manufacturers total (SITC-5 to 8):					
Eastern Europe	1.2	1.4	1.2	1.2	1.1
NIC total	2.8	6.2	7.4	8.5	8.6
Latin America	.6	1.4	1.5	1.7	1.7

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[7] See more: "National Legislation and Regulations Relating to Transnational Corporations," (New York: United Nations Centre on Transnational Corporations, 1983).

[8] Calculated from: Trade by Commodities, Imports, 1981 (Paris: CECD, 1983).

[9] Ibid.

TABLE 1.—MARKET SHARES OF EASTERN EUROPE AND THE NEWLY INDUSTRIALIZING COUNTRIES IN THE OECD TOTAL IMPORTS OF MAJOR MANUFACTURED GOODS—1970, 1980, 1981—Continued

[In percent]

	1970	1980	1981	1982	1983
Far East	2.2	4.8	5.9	6.8	6.8
3. Chemicals (SITC–5):					
Eastern Europe	1.5	1.4	1.5	1.5	1.5
NIC total	.9	1.7	2.1	2.0	2.3
Latin America	.7	.9	1.3	1.1	1.4
Far East	.2	.8	.8	.9	.9
4. Manufactured goods (SITC–6):					
Eastern Europe	1.6	1.6	1.5	1.6	1.7
NIC total	2.1	4.7	5.7	6.0	6.9
Latin America	.7	1.5	1.6	1.9	2.3
Far East	1.4	3.2	4.1	4.1	4.6
5. Machinery and transport equipment (SITC–7):					
Eastern Europe	.6	.8	.6	.5	.4
NIC total	1.2	4.2	5.0	5.4	6.6
Latin America	.3	1.1	1.4	1.5	1.8
Far East	.9	3.1	3.6	3.9	4.8
6. Miscellaneous manufacturers (SITC–8):					
Eastern Europe	1.8	2.1	1.8	1.7	1.6
NIC total	10.8	17.3	20.1	20.6	21.3
Latin America	.6	1.2	1.6	1.5	1.5
Far East	10.2	16.1	18.5	19.1	19.8

Source: Calculated from: Trade by Commodities, Imports (Paris, OECD, 1983).

The poor performance by Eastern Europe during 1981 contributed strongly to this divergence in export trends, but by no means can it be attributed to the latest events alone. In 1981, sales from Eastern Europe declined by 14.6 percent, which reduced its market share in the OECD import by only 0.1 points, from 1.3 percent in 1980 to the aforementioned 1.2 percent in 1981. Interestingly, none of the Eastern European countries reported any marked improvement in that year, with a majority of them showing substantial losses. Poland, hit by a severe economic crisis, contributed much to this drop in Eastern European exports, but Czechoslovakia, Hungary, and Bulgaria suffered their share too. By contrast, the 1981 exports from the newly industrializing countries increased by 13.4 percent, with only sales by Argentina stagnating. This boost helped increase their market share from 5.7 percent in 1980 to the aforementioned 6.7 percent in 1981, or by 1.0 points (Table 1).

For those who perceive Eastern Europe as technologically more advanced than the developing countries, including the newly industrializing ones, it must come as a surprise that the area in which Eastern Europe has been most outmatched are exports of manufactures, i.e., chemicals, manufactured products, machinery and transport equipment, and miscellaneous. Exports of manufactures from Eastern Europe to the OECD increased by 497 percent during 1970–1981, whereas the relevant index for the newly industrializing countries was 1336 percent, the difference being 839 points.[10] As a result, Eastern Europe was only able to keep its 1970 market share of 1.2 percent in 1981, while the newly industrializing countries increased their portion of the OECD imports of manufactures from 2.8 percent to 7.4 over that period (Table 1).

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[10] Ibid.

The gap in export performance has been particularly drastic in the machinery and transport equipment group (see Figure 1). In this particular category—considered technologically most complex among all manufactures—although the Eastern Europeans demonstrated results above the average for total exports, they still contrasted sharply with the achievements of the newly industrializing countries. The growth index for Eastern Europe in 1970–1981 was 723 percent, while exports of machinery and transport equipment from the newly industrializing countries increased by 1861 percent during that period, a difference of 1138 points.[11] Consequently, the Eastern European share in the OECD dropped from 1.6 percent in 1970 to 1.5 percent in 1981, compared with a sharp increase from 2.1 to 5.9 percent by the newly industrializing countries as previously reported (see Table 1).

The comparison of Taiwan with the whole group of Eastern European exporters of machinery and transport equipment is most striking. In 1970, exports by Taiwan to the OECD market amounted to $183 million, which exceeded by some margin the sales of Czechoslovakia, the then leader among Eastern Europeans, with a total of $135 million. In 1981, Taiwan sold machinery and transport equipment for about $4 billion, more than twice East Europe's exports ($1933 million). In fact, Taiwanese exports exceeded by four-fifths the joint exports of Eastern Europe and the Soviet Union in 1981. Interestingly, the exports from Taiwan were slightly less than those of Eastern Europe in 1977, but since then they almost tripled while those of Eastern Europe increased only by 27 percent with a sharp drop reported in 1981.[12]

Eastern Europe's exports of machinery and transport equipment are below the exports of three Latin American countries as well, even though the countries give more priority to domestic concerns than do the Far Eastern economies. The Latin Americans have hewed closer to the Eastern European policy, not only in their domestic focus, but also in their strong stress on heavier equipment, such as ships, machine tools, motor vehicles (i.e., passenger cars and trucks) and specialized machinery (e.g., for steel-making), in contrast with the consumer electronics and household equipment favored by the Far East. Still, the three Latin American countries, Brazil in particular, have performed much better than Eastern Europe. In 1970, Latin American exports of machinery and transport equipment amounted to $201 million whereas Eastern Europe reported $369 million, or 183 percent of the former. In 1981, on the other hand, Eastern Europe sold goods valued at $1934 million, compared with $4175 million by Latin America, or only 41 percent as much.[13]

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[11] This dramatic difference is even better illustrated by the comparison of the best performing Eastern European i.e., Hungary with the 950 percent increase and the leader from the other group of countries i.e., Singapore with the 4982 percent index.

[12] Calculated from: Trade by Commodities, Op. cit.

[13] More in: K. Poznanski, Direct Investment by Multinational Corporations and Technological Change in Eastern Europe and Latin America. Revue d'Etudes Comparitives Est-Ouest, No. 2, June 1985 (forthcoming).

In all other groups of manufactures Eastern Europe has also been falling behind the newly industrializing economies. Chemicals, where many western observers had expected a massive appearance of Eastern Europeans products, proved no exception. Chemicals were the only manufactures where Eastern European exports exceeded those by the newly industrializing countries in 1970: respective sales amounted to $235 million and $144 million, or three fourths as much for the newly industrializing countries.[14] In 1981, however, sales by the latter amounted to $1897 million, whereas Eastern Europe sold chemicals for $1346, just the reverse of 1970 proportions. The share of Eastern Europe in OECD imports of chemicals was 1.5 percent in 1970 and it remained at this level in 1981. At the same time, the newly industrializing countries increased their share from only 0.9 percent in 1970 to 2.1 percent in 1981 (see Table 1).

In manufactured goods, including various types of materials for further processing (i.e., steel, nonferrous metals, cotton and other types of fabric etc.) Eastern Europe was exporting already less than the newly industrializing countries in 1970, with respective sales of $762 million and $970.2 million. In 1981, the difference in sales was much more drastic, with Eastern Europe exporting $1.3 billion, whereas the newly industrializing countries earned as much as $10.7 billion, more than nine times the Eastern European total.[15] While Eastern Europe reported a loss in its market share, which dropped from 1.6 percent in 1970 to 1.5 percent in 1981, the newly industrializing countries gained in the OECD market, increasing their share from 2.1 percent to 5.7 percent over the period. The three Latin American countries by themselves were supplying larger fractions of this market in 1981 than Eastern Europe, although their share in 1970 was much less (see Table 1).

The category of manufactures in which Eastern Europe was most outmatched by the exports from the newly industrializing countries in 1970 was that labeled miscellaneous, composed mostly of garments, footwear, and furniture. By that time, the exports from Eastern Europe totaled $339 million, while the newly industrializing countries sold goods for $2.1 billion, or six times as much.[16] In 1981, Eastern Europe exported products for $2.2 billion, only slightly more than the newly industrializing countries did in 1970.[17] By 1981, the total sales by these countries amounted to $24.2 billion, almost eleven times more than Eastern Europe. The market share of Eastern Europe did not change during 1970–1981, remaining at 1.8 percent, whereas the newly industrializing countries increased their fraction of OECD imports from 10.8 percent in 1970 to 20.1 percent in 1981, a dramatic improvement considering the high initial share (i.e., in practice by the Far East).

B. The Magnitude of Trade Conflict

The fact that exports of manufactured goods by the newly industrializing countries to the West have been expanding much faster than sales by Eastern Europe does not necessarily imply, by itself, that the two groups of countries are engaged in an open trade conflict. This would have been the case only if they had moved into the same product areas. To find out whether there are strong overlaps or not, one can look at the composition of the leading export items offered by these countries in western markets. The data on manufacturing exports to the OEDC reveals that, while there were few overlaps in 1970, their magnitude was very substantial in 1980, due either to the successful promotion of new exports by the newly industrializing countries in areas where Eastern Europe had earlier concentrated its export effort (e.g., in steel and ships), or to the parallel expansion of new exports by the two groups of countries (e.g., in passenger cars and motor vehicle parts).

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[14] Calculated from: Trade by Commodities, Op. cit.

[15] Ibid.

[16] Ibid.

[17] Ibid.

In 1980, as much as one third of manufacturing exports, representing major positions in total sales by particular countries, consisted of similar products. They included: garments, footwear, steel, electrical machinery (particularly rotary electric plants), passenger cars and motor vehicle parts (including internal combustion engines), and ships. Some difference in the product structure were present as well, but they do not change the overall picture of strong similarities. Thus, the newly industrializing countries were more dependent on sales of telecommunication equipment (e.g., radio receivers in Taiwan and Hong Kong), and office machines (e.g., Mexico), whereas several types of chemicals and machine tools played particularly significant roles in a few Eastern European countries (e.g., Czechoslovakia and East Germany).[18]

These overlaps are stronger than the aforementioned comparison of product structure of exports suggests, since it appears that within the overlapping general product categories, the sales from both groups of countries tend to concentrate in the same lower, or medium quality segments. This is suggested by the comparison of export-unit values (i.e., prices per kilogram) obtained by Eastern Europe and the newly industrializing countries, compared with those paid to western exporters. With only very few exceptions, the export-unit values paid in 1980 for exports of ten selected manufactured goods to the OECD-Europe amounted, for Eastern Europe and the newly industrializing countries, to only one half, or less, of those obtained by western countries for their products of the same category—but clearly representing a higher quality level (see Table 2).

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[18] Ibid.

TABLE 2.—EXPORT-UNIT VALUES (PER KILOGRAM) FOR SELECTED GOODS EXPORTED TO THE OECD—EUROPE, 1980

[In U.S. dollars]

	Polymerization products	Manmade fabrics	Tires	Steel (plates and sheets)	Internal combustion engines	Rotating electric plants	Textile leather material	Machine-tools	Passenger cars	Footwear
Western Europe:										
Great Britain	1.65	7.57	3.34	0.77	6.74	6.05	13.74	11.19	5.01	21.06
Italy	1.37	11.30	3.59	.65	6.76	5.96	10.51	9.88	5.29	16.68
France	1.22	12.90	3.39	.63	7.09	7.27	10.65	8.92	5.86	15.46
West Germany	1.52	10.04	2.90	.60	7.11	9.18	14.06	12.27	6.54	23.57
East Europe:										
East Germany	.75	5.74	2.04	.38	5.00	2.18	5.92	4.61	1.69	3.15
Czechoslovakia	.76	5.42	2.12	.34	3.77	1.97	8.66	3.47	2.12	6.85
Poland	.82	5.70	3.04	.33	3.16	2.58	1.98	3.66	3.19	9.43
Hungary	.71	5.94	2.14	.35	6.39	2.34	3.76	6.56		10.53
Romania	.75	5.40	1.69	.36	2.53	2.01				7.84
NIC:										
Brazil		6.62	3.06	.39	4.56	2.67	7.87	9.26	3.58	17.89
Mexico					4.43		6.71		4.55	[2] 12.28
South Korea	[1] .93	7.27	2.60	.49	[1] 4.54	[1] 8.27	5.18	4.99	3.28	6.19
Taiwan	[1] 1.01	5.06	2.85	[2] .58	7.65	[1] 11.65	6.25	3.47		7.89

[1] Exports to Japan.

[2] Exports to the United States.

Source: Calculated from, Trade by Commodities, Imports (Paris: OECD, 1982).

There is also an evidence that the newly industrializing countries very rarely sell manufactured goods of lowest relative price (calculated per kilogram), whereas Eastern Europe does it quite often. In the ten product categories covered here, the lowest export unit value was usually paid to one of the Eastern Europeans. For instance, in 1980 exports of passenger cars, the lowest price was obtained by East Germany, namely, $1.69 per kilogram, compared with $4.55 per kilogram for Mexican suppliers. East Germany also received the lowest price for its footwear—$3.15 per kilogram of exports in 1980 (compared with $17.89 paid to Brazil). Poland obtained only $1.98 per kilogram of its textile and leather machinery, in sharp contrast to the $6.25 per kilogram paid on the OECD-Europe market to Taiwan (see Table 2).

The aforementioned contrast in relative prices can be seen as a further evidence that, at least in these ten product areas, the newly industrializing countries have surpassed some of the Eastern European industries. However, this data could also be interpreted in a different way, namely as an indication that the newly industrializing countries may not push their poor-quality goods on western markets, whereas the Eastern Europeans might choose to sell such products because no higher-quality substitutes are available at the moment. This is only speculation, but not without some merit if one recalls the well-demonstrated fact that the Eastern European economies, with an irrational price-structure and misguided incentive system, do not optimize their trade but rather tend to target their export revenues to balance an arbitrary amount of imports (see: T. Wolf [19]) permitted by the planners.

A look at the geography of exports from both groups of countries suggests, however, that the trade conflict might be less severe than indicated by the aforementioned data. This is because most of the exports from Eastern Europe are headed toward Western Europe, the Common Market in particular, whereas the newly industrializing countries are primarily geared to the United States and Japanese markets. For instance, in 1980 the United States imported 50.2 percent of all the manufactured goods exported to the OECD group by the newly industrializing countries, but only 7.1 percent of corresponding Eastern European sales.[20] At the same time, the members of the Common Market purchased only 27.0 percent of exports from the newly industrializing countries and as much as 62.6 percent of the manufactured products sold by Eastern Europe to the OECD in that year.[21]

Under closer examination, it turns out that Eastern Europe is exposed to strong competition not only in the United States but also in Western Europe. The last decade's advances by the newly industrializing countries have helped them improve their market position in Western Europe relative to that of Eastern Europe. Moreover, the newly industrializing countries in many instances have captured larger shares of the market for certain goods imported by Western Europe than is the case with Eastern European exports (e.g., garments, several consumer electronics). The highest shares obtained by newly industrializing countries in their leading exports much exceed what the Eastern Europeans have been able to gain in their most important export items (e.g., some petrochemicals, steel).

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[19] T. Wolf, "Optimal Foreign Trade for the Price-Insensitive Soviet-Type Economy," Journal of Comparative Economics, vol. 6, (1982), 54–67.

[20] Calculated from: Trade by Commodities, Op. cit.

[21] Ibid.

The strong attachment of the Eastern Europeans to the Western European market is a handicap in their competition with the newly industrializing countries, for Western Europe, particularly the Common Market shows a lower propensity to import manufactured goods from all newcomers than does the United States. In 1980, for instance, the Common Market imported 54.8 percent of all manufactured products purchased by the OECD countries, but only 39.7 percent of those coming from Eastern Europe and the newly industrializing countries combined. In contrast, the share of the United States in total OECD manufactured imports in that year was 17.6 percent, but the respective share in the imports from Eastern Europe and the newly industrializing countries was 50.6 percent.[22]

III. ANALYSIS OF BASIC PRODUCTS OF MANUFACTURING SECTOR

To further test some of the above observations and bring new elements to the analysis, a more disaggregated look at both groups of countries is necessary. The following section focuses on several manufacturing sectors in Eastern Europe and the newly industrializing countries. These industries cover the whole production spectrum, i.e., intermediate goods, capital goods, and consumer products, and they also represent areas of particular importance for export promotion by both groups of countries. The analysis of changes in competitiveness includes: firstly, comparison of production capacities as one of the major preconditions of trade, secondly, assessment of relative technological levels, seen as another trade-determining factor, and, finally, comparison of actual export data. These are presented so as to highlight directly the trade struggle between Eastern Europe and the newly industrializing countries.

A. Intermediate Goods

Eastern Europe entered the last decade with a substantial advantage in the production of intermediate goods over all the newly industrializing countries. If the production levels of key intermediate products indicate economic advancement, the newly industrializing countries, as a group, would have to be regarded as lagging dramatically behind Eastern Europe in both 1970 and 1981. However, one should also look at the qualitative aspects, including the technological level of production in this sector of industry and at competitive positions on the world market as well. A look at this qualitative aspect suggests that, while lagging in quantities, the newly industrializing countries represent a comparable if not superior level of technology in such products as steel or certain chemicals, and that they outcompete Eastern Europe in the western markets for these products as well.

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[22] Ibid.

1. IRON AND STEEL INDUSTRY

The Eastern Europeans entered the seventies with production capabilities in the steel industry several times larger than those of the newly industrializing countries. In 1970, the total output of steel ingots in Eastern Europe was 38.4 million tons, whereas the newly industrializing countries (excluding Argentina, Hong Kong, and Singapore) made less than 11 million tons in that year, or only about one quarter of the Eastern European total.[23] In 1981, however, this difference was substantially smaller. By that time Eastern Europe produced 62.0 million tons and the newly industrializing countries made 27.9 million tons, almost half the Eastern European output.[24] Due to the last decade's expansion, Eastern Europe was able to increase its share in the world production of steel (ingots) from 6.7 percent in 1970 to 8.0 percent in 1981, or by 1.3 points. In the same period, the newly industrializing countries enlarged their share in world output from an estimated 1.8 percent to 4.1 percent. This improvement resulted mostly from a tremendous expansion of steel production in Brazil and South Korea, whose individual outputs, however, remain small by Eastern European standards (e.g., Brazil's production was smaller than that of Poland or Czechoslovakia in 1981).

While smaller in quantitative terms, the steel industry of the newly industrializing countries is in some cases more technologically advanced than the Eastern European one. Much effort has been put forth by the Eastern Europeans to modernize their industries, including substantial purchases of western equipment. Most of this equipment has continued to be supplied, however, by the Soviet Union, which lags behind the West in technologies for the final stages of steel processing and in high-quality steel. This situation contrasts with that of the newly industrializing countries, supplied mostly by large western corporations, particularly from Japan. Partly for this reason, the steel industry of the newly industrializing countries is using more of the most advanced technologies than is Eastern Europe. To illustrate, in 1980 the share of oxygen-blown steel in total output was about 65.9 percent for Brazil, and 76.2 percent for South Korea; whereas the corresponding share for Poland was around 39.1 percent, in Romania 44.4 percent, and in Bulgaria 57.0 percent, the highest among Eastern Europeans (also higher than that of the Soviet Union), and only 9.3 percent for East Germany [25] (see Figure 4).

The recent increase in production and technological capacities by Eastern Europe has not been of much help in the effort to penetrate western economies, at least as far as market shares are concerned. The share of Eastern Europe in OECD imports of steel was 4.9 percent in 1970 and remained at that level by 1981. By and large the Eastern Europeans, including the most export-oriented steel industry of Czechoslovakia, export their steel not for purely profit-type reasons but rather because they are forced to exchange their surpluses of inexpensive carbon steel for high-quality (chiefly alloy) steels made in the West. This picture differs much from that of the newly industrializing countries, some of which (e.g., South Korea) have clearly developed their capacities primarily for the world market, including that for speciality steels. Not surprisingly, these countries were able to increase their share in OECD imports from an insignificant 0.3 percent in 1970 to 5.1 percent in 1981 (see: Table 3).

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[23] From Yearbook of Industrial Statistics (New York: United Nations, 1979).

[24] Calculated from Monthly Bulletin of Statistics, (New York: United States, 1982).

[25] See K. Poznanski, "New Dimension in International Trade: East-South Competition in the West," Op. Cit. Also: K. Poznanski, "International Diffusion of Steel Technologies, Time Lag and the Speed of Diffusion," Technological Forecasting and Social Change, No. 23, (1983), 305-323.

TABLE 3.—SHARES OF EASTERN EUROPE AND THE NEWLY INDUSTRIALIZING COUNTRIES IN THE WORLD PRODUCTION (a) AND THE OECD IMPORTS (b)

	1970	1975	1980	1981
1. Intermediate goods:				
1.1 Steel (ingots):				
(a) Share in production:				
Eastern Europe	6.7	7.9	8.5	8.0
Newly industrializing countries	1.8	2.5	4.2	4.1
(b) Share in imports:				
Eastern Europe	4.9	4.9	5.8	4.9
Newly industrializing countries	.3	.4	4.8	5.1
1.2 Products of polymerization and copolymerization:				
(a) Share in production:[1]				
Eastern Europe	1.9	3.3	4.4	4.7
Newly industrializing countries	1.0	3.0	5.6	5.8
(b) Share in imports:				
Eastern Europe	.7	0.3	1.5	1.8
Newly industrializing countries	.0	0.1	1.7	2.3
2. Capital goods:				
2.1 Ships:				
(a) Share in production:				
Eastern Europe	3.9	3.7	6.5	6.0
Newly industrializing countries	.9	2.5	13.2	14.6
(b) Share in imports:				
Eastern Europe	2.3	2.8	4.4	2.2
Newly industrializing countries	.6	0.8	5.2	8.5
2.2 Machine tools:				
(a) Share in production:				
Eastern Europe	9.0	11.5	7.8	7.9
Newly industrializing countries	1.2	1.2	2.8	3.2
(b) Share in imports:				
Eastern Europe	4.9	4.8	3.6	3.1
Newly industrializing countries	.0	.0	2.7	3.4
3. Consumer goods:				
3.1 Passenger cars:				
(a) Share in production:				
Eastern Europe	1.6	2.2	2.8	....
Newly industrializing countries	1.7	3.3	5.1	....
(b) Share in imports:				
Eastern Europe	.2	.3	.4	.3
Newly industrializing countries	.0	.0	.2	.3
3.2 Radioreceivers:				
(a) Share in production:				
Eastern Europe	2.5	3.7	2.8	2.9
Newly industrializing countries	27.5	47.9	44.7	41.4
(b) Share in imports:				
Eastern Europe	.3	.4	.3	.3
Newly industrializing countries	14.6	29.7	38.5	39.7
3.3 Watches:				
(a) Share in production:				
Eastern Europe				
Newly industrializing countries				

TABLE 3.—SHARES OF EASTERN EUROPE AND THE NEWLY INDUSTRIALIZING COUNTRIES IN THE WORLD PRODUCTION (a) AND THE OECD IMPORTS (b)—Continued

	1970	1975	1980	1981
(b) Share in imports:				
Eastern Europe	.4	.3	.3	.1
Newly industrializing countries	.7	14.3	30.6	32.5

2. PRODUCTION OF PETROCHEMICALS

Eastern Europe entered the seventies with a slight edge over the newly industrializing countries in the production of modern petrochemicals, a fact reflected for instance in the relative size of polyvinylchloride (PVC) output in both groups of countries. The output of PVC—one of the crucial intermediate products of the petrochemical industry—amounted to 556.3 thousand tons in Eastern Europe (excluding East Germany) in 1975, compared to 467.4 thousand tons in the newly industrializing countries (excluding Singapore and Hong Kong). However, this gap closed a few years later, and in 1981 the respective outputs were 735.6 and 985.8 thousand tons.[26] In the production of synthetic fibers the newly industrializing countries have built up even a bigger edge, as the comparison of Eastern Europe with South Korea and Taiwan indicates (see: Figure 3). In recent years, Eastern Europe has significantly reduced its investment in chemicals due to the higher prices of Soviet oil since the 1975 revision of intra-regional pricing mechanism. Many newly industrializing countries (e.g., Taiwan, South Korea) have scaled down their programs as well, also due to the higher prices charged by exporters of oil form Middle East and elsewhere. However, oil-rich countries like Mexico are likely to continue their expansion—as indicated among other things by its increasing output of ethylene[27]—and this may give the newly industrializing countries a clear edge over Eastern Europe in the coming years.

This last decade's expansion of petrochemicals has been based on more or less the same sources of technology in both groups of countries, i.e., western manufacturers of processing equipment. Most of the major installations have been imported by Eastern Europe on a turn-key basis from the West, due to the lack of sufficient capacities in the region and heavy shortages of modern equipment in the Soviet Union. The picture for the newly industrializing countries is similar with one significant difference, namely, they have relied less on purchases of complete installations than on direct investment by petrochemical corporations. No significant direct investment by western corporations has taken place in Eastern European petrochemicals, while, for instance, more than half of the total output of the South Korean petrochemical industry comes from foreign subsidiaries and joint-ventures.[28] This closer integration of the

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[26] Calculated from Yearbook of Industrial Statistics, (New York: United Nations, various years).

[27] See: Maly Rocznik Statystyczny GUS, 1983, Op. cit.

[28] See: B.Y. Koo, "The Role of Foreign Direct Investment in Recent Korean Economic Growth," Cornell University, 1982 (mimeograph), 69–71, lists thirteen foreign firms operating in

Continued

newly industrializing countries is likely to give them some advantage over Eastern Europe, for instance in terms of access to some secrets of production technology.[29]

Many countries in both groups have directed much of their new petrochemical output to the western economies. This has resulted in a visible improvement of their market positions. For instance, in the area of polymerization and copolymerization products, Eastern Europe increased its share of OECD imports from 0.7 percent in 1970 to 1.8 percent in 1981, even though its share in total imports of chemicals as mentioned before, did not change at all: the largest gains were reported by East Germany, Czechosolvakia, and Hungary. Even more impressive was the progress reported by the newly industrializing countries, whose share in 1970 was negligible but in 1981 reached 2.3 percent, with major supplies from South Korea and Taiwan (see Table 3). There are grounds, however, to believe that both groups of countries will find it difficult to go beyond their current share of western markets, since they are not likely (aside from Mexico) to withstand the growing competition from oil-rich countries (e.g., Indonesia, Saudi Arabia).

B. Capital Goods

In capital goods Eastern Europe had a clear advantage over the newly industrializing countries by the end of the sixties. This was partly due to the earlier industrial take-off by Eastern Europe, particularly Czechoslovakia and East Germany. It also resulted from an exceptionally high priority given to the capital goods industries by the Eastern European planners, who perceived this sector as a major engine of technological change in their economy. Since the early sixties many developing countries have intensified their investment effort in capital-good manufacturing, especially Brazil and Mexico with their drive toward import substitution, and South Korea mostly for strategic reasons (i.e., its confrontation with North Korea). This effort has resulted in a substantial reduction of original differences in output, and in some cases the newly industrializing countries have even surpassed Eastern Europe (e.g., ships). There is evidence that they have been even more successful in catching up with the Eastern European level of technology (e.g., in computers and electronic components).

1. COMMERCIAL SHIPS

In the production of ships[30] Eastern Europe enjoyed an enormous lead over the newly industrializing countries in 1970. The total tonnage of ships made in Eastern Europe was 849.6 thousand GRT (excluding Czechosolvakia, Hungary, and Romania), compared with around 215.0 thousand GRT (not including Mexico and Hong Kong), or one quarter as much. The total output of the newly in-

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petrochemical industry, all of them but one (Dow Chemical, Netherlands) of joint-venture type with 50 percent or less foreign ownerships.

[29] See more on the policy by exporters of technology from the West, E. Mansfield, et al., "Foreign Trade and U.S. Research and Development" (February 1979), Review of Economics and Statistics, vol. LXI, No. 1.

[30] From: Lloyd's Register of Shipping, Annual Summary of Merchandise Ships Completed (Launched) in the World, (London) various years.

dustrializing countries was, in fact, only half of that supplied by Poland alone (i.e., 463.4 thousand GRT in 1970). By 1981, however, when the tonnage of Eastern European ships was 1037 thousand GRT, the newly industrializing countries build an estimated 2550 thousand GRT, two and a half times as much as Eastern Europe. By this time South Korea, with virtually no production at the beginning of the seventies, made more ships than Eastern Europe. This difference in the production build-up resulted in an increase in the Eastern European share of world output from 3.9 percent in 1970 to 6.0 percent in 1981, whereas the newly industrializing countries enlarged their share from 0.9 percent to 14.6 percent during that period (see Table 3).

Eastern European shipbuilding was also more technologically advanced in the early seventies, with Poland being the unquestionable leader in the whole sample of countries here analyzed. While Eastern Europeans were involved in production of various vessels types—including many involving complex technology—the new industrializing countries were concentrating on relatively simple tankers and other bulk cargo ships (in South Korea only wooden vessels were made by 1970). However, during the last decade the newly industrializing countries appear to have acquired more of advanced technology than Eastern Europe, mostly due to their closer relations with western multinational corporations, Japan in particular.[31] In many respects some of the newly industrializing countries are more advanced now than Eastern Europe. One piece of evidence, is the fact that these countries are heavily involved in the production of relatively complex containerships and oil-rigs, which are made by Eastern Europe in marginal quantities only.[32]

Due to these trends in the production capacities and technology level of shipbuilding in both groups of countries, the newly industrializing economies have been able to build up an export potential which largely exceeds that of Eastern Europe. In 1970, Eastern Europe (i.e., East Germany, Bulgaria, and Poland) exported to the world ships valued at $406.6 million, while the newly industrializing countries (i.e., Brazil, Mexico, Taiwan, South Korea, and Singapore) sold only $33.6 million.[33] In 1979, Poland and East Germany, the major exporters in Eastern Europe, sold ships for about $1.3 billion, only slightly above the exports by the newly industrializing countries of estimated value $1.2 billion.[34] But in 1982, the South Korean shipbuilding industry alone reported book-orders, the majority from foreigners, for a total tonnage much above that obtained by all of Eastern Europe in the largely depressed world market for ships.[35]

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[31] The only two Brazilian shipyards able to make large vessels are Japanese subsidiary, see: Brazil Industrial Policies and Manufactured Exports, World Bank, Report No. 3766-82, July 2, 1982, 130–131.

[32] In 1981, three newly industrializing countries, Brazil, South Korea, and Taiwan made containerships of the total tonnage of 110.3 thousand GRT, representing 15.2 percent of the world output of those vessels, while Eastern Europe reported the output of 8.7 thousand GRT or 1.2 percent of the world total. From: Maty Rocznik Statystyczny GUS, 1983, (Warszawa, 1983), 325–326.

[33] From: Bulletin of Statistics on World Trade in Engineering Products, (New York: United Nations 1981) and Yearbook of International Trade Statistics, vol. I. Trade by Country (New York: United Nations, 1981). Since the data for Eastern Europe are presented in dollar values converted from local currencies with artifically high exchange rates the advantage of Eastern Europe in 1970 is likely to be exaggerated, while the lead by the newly industrializing countries in 1979 is almost certainly underestimated.

[34] Ibid.

2. COMPUTER EQUIPMENT

The production of computers began much earlier in Eastern Europe than in the newly industrializing countries, with Czechoslovakia and Poland being the unquestioned leaders in the region. The real breakthrough in the computer industries of Eastern Europe took place only in the last decade when all the countries of the region—with strong pressure from the Soviet Union—moved into manufacturing compatible computers. At the same time, some of the newly industrializing countries have attracted some western subsidiaries and made an effort to establish their national companies as well (e.g., Brazil in minicomputers which are fully reserved for domestic companies.[36] However, many of them while preparing to launch the necessary programs soon, still do not operate any sizable computer industries (e.g., Taiwan [37] and South Korea). There is some evidence that due to the recent build-up of its computer industry, Eastern Europe has been able to retain, at least temporarily, if not increase, an original edge in the scale of computer production over the newly industrializing countries.[38]

While smaller in scale, the production of computers by the newly industrializing countries seems to represent a higher technological level than the Eastern European computer-makers, and the same picture holds in the area of components manufacturing. The newest models manufactured by Eastern Europe are copies of an American computer family introduced to the market in the mid-sixties, and there are many indications that these copies are of poorer quality than the originals (see S. Goodman [39]). In contrast, the newly industrializing countries rely on direct supplies of western technology not much different in vintage from that used by the leading western—notably American—manufacturers, (Brazil is a good case in point). The United States is also a major source of technology for electronic components, including that for chips, which is generally not available (through official commercial channels) to the Eastern Europeans. The latter have to go instead through a slow process of reverse-engineering, in which only some successes have been reported to date.[40]

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[35] See Norwegian Shipping News, vol. 38, No. 7 (21 May 1982).

[36] More in: P.B. Tigre, "Technology and Competition in the Brazilian Computer Industry," (New York: St. Martin's Press, 1983) 39–73.

[37] Three U.S. companies (Texas Instruments, Key Tronic, and AT&T plan a multi-million investment in Taiwanese electronic industry. This plan includes the manufacturing of integrated circuits (also very large-scale circuits) and keyboards, but no sizable production of computer systems will begin in the close future. From: "High Technology Investment to be Stepped Up in Taiwan," Financial Times, (Sept. 13, 1983), 6.

[38] According to P.B. Tigre (see: footnote 32), the total value of Brazil's output of computer and peripherals was estimated for $1.1 billion in 1981, less than the combined output of two Eastern Europeans, i.e., East Germany and Poland in 1979, equal $1.2 dollars (From: K. Tasky, "Eastern Europe: Trends in Imports of Western Computers Equipment and Technology" in: East European Economic Assessment, part 2, Joint Economic Committee, U.S. Congress, Washington D.C., July 10, 1981).

[39] S. Goodman, "Computing and The Development of the Soviet Economy" in: "The Soviet Economy in the Time of Change," Joint Economic Committee, Washington D.C., 1979, vol. I, 524–553. Also S. Goodman, "Computing and Technology Transfer, An Overview," World Politics, vol. 30, No. 4 (July 1979).

Final products of the computer industry continue to be insignificant in the exports of manufactures on western markets by both Eastern Europe and the newly industrializing countries, only Brazil recently reporting somewhat more significant sales (e.g., to Japan). In both groups of countries, suppliers are still too limited to allow any large-scale exports, with Eastern Europe being additionally constrained by the incompatibility of its systems with those operated in the West (see K. Tasky [41]). This picture contrasts with the sales of computer components, where the newly industrializing countries, but not Eastern Europe, have made substantial progress in the West. For instance, while almost no sales of integrated circuits and microprocessors by Eastern Europe were reported in the United States in 1981, the newly industrializing countries exported $518 million worth of such components, representing fully 24.0 percent of the total imports by the United States in this product category.[42]

C. Consumer Goods

The consumer industries in Eastern Europe traditionally have been underinvested, although there are some indications of increased interest in their expansion among planners during the seventies. Also, consumer goods are less traded than other products in these generally "undertraded" economies. Not surprisingly, Eastern Europe has performed more poorly in the consumer sector than the newly industrializing countries, where no particular bureaucratic constraints have been put on investment, thus making the dilemma between the domestic and world market less of a problem than it is in Eastern Europe. In this case, Eastern Europe was much behind already in 1970, and the gap in the scale of exports and technological level of most consumer goods has widened since.

1. PASSENGER CARS AND PARTS

Production of passenger cars and parts is one of the many consumer industries in which the newly industrializing countries achieved a marked advantage over Eastern Europe as early as the sixties, despite the lower income level of the former. This fact in itself comes as no surprise, if one considers the low priority given to the consumption sector in Eastern Europe in the later post-war decades, but the magnitude of the advantage is striking. In 1970, Eastern Europe made only 358 thousand cars while the newly industrializing countries, particularly in Latin America, supplied 560 thousand units, almost 50 percent more.[43] In 1980, the respective numbers were 813 thousand and 1.7 million, giving the newly industrializing countries an edge of almost 210 percent.[44] The same picture holds in the production of motor vehicle parts, where the newly industrializing countries have invested much more effort than has Eastern Europe, partly in response to the western multinational corporations policy of relocating much of their parts production to labor-cheap countries of Latin America (e.g., Ford in Brazil) and the Far East.

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[40] There is some evidence that while Eastern Europe is generally lacking a domestic capability to develop technology for a large-scale manufacturing of chips, some of the newly industrializing countries are able to acquire this technology from the West or develop by themselves. A. Spaeth, "Korean Companies Set Expensive Plans to Make Microchip Plants Competitive," Wall Street Journal, (Feb. 9, 1984), 30, reports that four major South Korean electronic companies are spending a total of three-quarters of a billion dollars on their semiconductor production facilities (i.e., 64K chip and the next generation 256K memory chip) to be licensed by western corporations or independently developed by Koreans.

[41] K. Tasky, "Eastern Europe: Trends in Imports of Computers Equipment and Technology," Op.cit.

[42] From: U.S. Imports for Consumption and General Imports, 1981, U.S. Department of Commerce, Washington D.C., 1982. Those components include: monolithic integrated circuits; bipolar monolithic integrated circuits; MOS random access memories; MOS memories; microprocessors MOS; MOS integrated circuits; chips as parts for semiconductors.

In the late sixties both groups of countries were manufacturing outdated models and in order to modernize their production at least some of them have recently turned to western countries for more advanced technology. Among the newly industrializing countries Brazil has been the most successful and has built up large-scale production of the most advanced medium-quality compact cars (i.e., fuel-efficient, front wheel, two-door), most of the technology being supplied by the U.S. subsidiaries (e.g., Ford). South Korea and Taiwan [45] are completing large facilities for making the newest compact cars, based on technology from Japanese multinational corporations. In contrast, the most modern Eastern European countries, i.e., Poland and Rumania, manufacture models based on mid-sixties technology, lately imported from the West, while East Germany and Czechoslovakia retain even more outdated technology of late-fifties vintage.

Despite initially smaller capacities, Eastern Europe became more involved in exporting cars to the West by the early seventies, and it continues to have some edge over the newly industrializing countries. In 1970, the share of Eastern Europe in OECD car imports was 0.2 percent, and it increased to 0.3 percent in 1981, compared with an increase from less than 0.1 percent to 0.3 percent achieved by the newly industrializing countries over the same period (see Table 3). However, strong evidence suggests that the latter will soon surpass the Eastern Europe as exporters. Poland, the major exporter in the region, will not soon expand its sales above the pre-crisis level, while East Germany and Czechoslovakia are being eliminated from western markets due to the obsolescence of their cars. In contrast, the newly industrializing countries seem to be ready to continue their rapid export growth, Brazil in particular.[46] This is likely not only because of the aforementioned capacity expansion and relatively advanced automotive technology, but also because these countries are going to be helped in their export efforts by the western multinational corporations, which previously were interested in promoting Eastern European exports to the West.

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[43] From: World Automotive Market, Automobile International, (New York, 1979 and 1980).

[44] Ibid.

[45] The largest South Korean car maker Hyundai Motor Company, currently has the capacity to produce 110 thousand cars and trucks, but in 1985 it will open a new plant capable of producing 300 thousand front-wheel-drive cars annually. From: GM, Daewoc Seen Signing Car-Making Pact, Wall Street Journal, (Mar. 1, 1984).

[46] More: C.J. Dahlman, "Foreign Technology and Indigenous Technological Capability in Brazil," World Bank, May 1982 (mimeograph), 30–37. According to some sources Brazil's production of passenger cars is believed to increase up to 1.4 million units in 1985, giving this country the sixth place on the world list of major producers. See: Brazil set to join top car producers, Financial Times, (May 16, 1983).

2. CONSUMER ELECTRONICS

Already in 1970, the newly industrializing countries as a group had outperformed Eastern Europe in the production of some consumer electronics products, such as radio receivers and television sets, and this gap has subsequently widened dramatically. In 1970, the newly industrializing countries made 35.4 million radio receivers, while Eastern Europe produced only about 3.0 million, one twelfth as much. In 1981, the former reported output of almost 74.0 million radios, compared with the Eastern European production of 4.9 million, or one fifteenth as much. Even more drastic has been the widening of the early gap in television sets, where the production by the newly industrializing countries increased from 2.5 million units in 1970 to 19.8 million in 1981, whereas Eastern European output expanded from 2.2 million in 1970 to 2.9 million in 1981, the latter output representing only one-sixth of that by the newly industrializing countries in that year (and less than Brazil's production, 3.2 million).[47] Among other products in this category, electronic calculators and watches [48] provide good examples of how rapidly the newly industrializing countries have been increasing their edge over Eastern Europe.

In the early seventies the newly industrializing countries enjoyed some technological advantage over Eastern Europe and there is sufficient evidence that the difference has grown. For instance, in the production of television sets almost all the makers among the newly industrializing countries have moved to large-scale manufacturing of color sets based on the latest western technology, particularly that supplied by Japan. In Eastern Europe, only Hungary and Poland have acquired western technology for color television, while the others either continue to manufacture black and white sets only, or rely on inferior Soviet technology. In 1978, the production of color sets represented almost 41.5 percent of total production in Taiwan and 32.7 percent in Brazil, but only 28.7 percent in East Germany and 9.3 percent in Poland.[49] In 1983, this share amounted to 56.4 percent in South Korea and only 37.3 percent in the Soviet Union (see: Figure 4). To give another example, in the production of electronic watches, the leaders among the newly industrializing countries (e.g., Hong Kong), utilize the most advanced microprocessor technology, while Eastern Europe has taken only the first steps toward refocusing its production on digital models.

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[47] In countries like Bulgaria a drastic drop in total products of both radio receivers and television sets was reported in 1976–1980. The output of radio receivers decline from 227 thousand in 1976 to 51 thousand in 1980.

[48] Comparison with Taiwan is in place here. Taiwan's output of electronic (the only made) watches was 284 thousand in 1975, while the leading Eastern European producer East Germany manufactured 3.789 thousand watches in that year. In 1979, Taiwanese production reached 8018 thousand, while East Germans made 3.967 thousand watches. (Eastern European production was 4.486 thousand units). From: Yearbook of Industrial Statistics, 1981, (New York: United Nations, 1982) and Monthly Statistics of the Republic of China, No. 174 (June 1980).

[49] From: Maly Rocznik Statystyczny GUS, (Warszawa: GUS) various years, and Statistical Pocket Book of the German Democratic Republic, (Berlin), various years.

Eastern Europe has never been an important source of consumer electronics for the world market, and intra-regional trade has not been of much significance either. Only Hungary, Romania, and Poland have lately tried to launch some exports to the West, while the traditional suppliers, East Germany and Czechoslovakia have not. With this effort Eastern Europe has been able, for instance, to keep its 1970 share of the OECD market for radio receivers equal to 0.3 percent by 1981.[50] This is to be compared with an increase from 14.6 percent in 1970 to 39.7 percent in 1981 reported by the newly industrializing countries (see Table 3). Even more striking is the case of watches, where the Eastern European share dropped from 0.4 percent to 0.1 percent, while the newly industrializing countries increased their fraction from a very low 0.7 percent to 32.5 percent during 1970–1981 (see Table 3). In the case of radio receivers, Eastern Europe had no chance against the competition from newly industrializing countries as early as the early seventies, but the example of watches shows that it has been unable to grasp the opportunities still existing in some categories of consumer electronics.

IV. FUTURE TRENDS IN THE TRADE CONFLICT

There is rather strong evidence suggesting that the threat posed to Eastern European exports of manufactured goods by the newly industrializing countries is very likely to intensify in the coming years. This is suggested, among other things, by the fact that many newly industrializing countries continue to invest heavily in the export-industries, whereas most of the Eastern Europeans are going through a period of squeezed investment programs. Moreover, at least up to the late eighties most of the funds allocated to investment in Eastern Europe will benefit such sectors as energy production, agriculture, and housing, none of them intended or likely to improve exports in a direct way. It is also uncertain whether these investments will have any strong indirect impact on export promotion, (i.e., relaxation of some import requirements which could help to increase the imports of western equipment needed to back up the export industries in the region).

This failure can be illustrated with a few examples from industries discussed earlier in this analysis. For instance, most of the further increase in steel output in Eastern Europe in the near future will come from gradual modernization of existing mills, while most of the newly industrializing countries will be building large additional capacity. Romania is the only country in Eastern Europe where the national plan assumes a construction of new mills. According to the guidelines for 1986–1990, the output of crude steel should be doubled (from 12.6 million tons in 1983 to 25–27 million by 1990), but the lack of local iron ore and coke deposits may undermine this plan. By contrast, South Korea is moving ahead with its plan to build a second integrated steel mill of 2.7

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[50] In the whole group of telecommunication and sound recording apparatus (including radio receivers) the Eastern European share of the OECD imports was 0.2 percent in 1970, and it continued to be at this level in 1984, while the newly industrializing countries increased their share from 4.1 percent to 21.2 percent over that period. From: Tradeby Commodities, Imports, (Paris: OECD, 1983).

million tons in capacity by 1987, ultimately raising it to 12 million tons (and so making it one of the largest in the world).[51] Mexico is expected to increase its output from 7.4 million tons in 1981 to 19.2 million tons in 1990, by constructing new plants with western help.[52] There are some signs, however, that, due to the current difficulties, Mexico may cut down its ambitious programs by a large margin.

None of the Eastern Europeans intends to invest in a physical expansion of their car industries,[53] and will rather reduce their effort at retooling and model upgrading, as in the case of Poland, for example. The Polish government has expressed its interest in getting involved in a new car plant of a venture type, but it may be difficult to attract western partners given the poor state of the economy. After years of deliberations East Germany and Czechoslovakia have started their modernization programs, which are not going to sharply increase their outputs. By contrast, countries like Brazil and Mexico are heavily investing in the construction of new plants with Mexico planning a facility for one hundred thousand small cars a year to be supplied from 1986.[54] South Korea has already begun to expand its car industry with the help of western multinational corporations as well.[55]

One factor that may help the newly industrializing countries in their current effort is the ability to raise larger sums in fresh credits and get much of their current obligations rescheduled by western banks and international institutions on better conditions than Eastern Europe. The most difficult to predict is the borrowing by the three big debtors in Latin America, i.e., Argentina, Brazil, Mexico, but the magnitude of their obligations makes their revival so critical for the international financial market that they could continue to absorb much of the new money. By contrast, these possibilities remain very much closed to Eastern Europeans. After three to four years of almost no new credits for the region, and a painful rescheduling of the Polish debts, at least some financial institutions are trying to reopen their lending. This fact is marked by the recent bank loan to Hungary[56] and the government sponsored credit-line opened to East Germany lately. These loans, however, are small and limited to trade credits and special projects only. There are, so far, no signs of a large-scale return to the general-purpose loans so popular in the seventies,[57] even though Eastern Europe has been able to reduct its total debt to the West since 1981.[58]

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[51] J. Martin, Japanese agree to transfer steel expertise to South Korea, Financial Times, (Dec. 2, 1983).

[52] Mexican Steel Production Moves into Top Gear, Latin America Weekly Report, Vol. VII, No. 42 (Oct. 26, 1979).

[53] According to some western sources, Bulgaria is interested in opening new facilities by 1986, and reach a yearly output of 100 thousand compact cars by 1990. See: Business Eastern Europe, (June 24, 1983).

[54] A Japanese beat for the Mototown Sound, Economist, (Jan. 14, 1984), 59–60.

[55] The U.S. General Motors plans to invest in a joint-venture with the second largest car maker in South Korea, Daewoo Corporation to expand its output by 100 thousand units, to be sold mostly in the United States: From: "GM, Daewoo Seen Signing Car-Making Pact," Op. cit.

[56] A. Shlaes, "U.S. Banks Looking to Lend Again In Financially Sounder East Europe," Wall Street Journal, (Mar. 1, 1984), 32.

[57] Ibid., gross debt to the West reportedly was reduced by Eastern Europe from $67.4 billion in 1981 to $61.7 billion in 1983 (June).

[58] J.M. Montias, "Observations on Recent Trends in East-West Trade," Op. cit., 2.

Another circumstance which puts the newly industrializing countries in the better position is that, on the top of large amounts of credits, they are financially backed with substantial direct investment by western corporations, which Eastern Europe has failed to attract. Eastern Europe remains in a few cases totally closed to foreign investment (e.g., Czechoslovakia), while other countries—with their bureaucratic systems—are unable (not excluding Hungary[59]) to provide conditions as attractive as those created by the newly industrializing countries. The current gap in cumulative foreign direct investment (see K. Poznanski[60]), is likely to widen in the coming years, due to the indecisiveness of Eastern European planners regarding current laws and to the generally poor political climate in East-West relations. These cause corporate managers to consider the region as high risk compared with the newly industrializing countries.

The future outcome of the competition between Eastern Europe and the newly industrializing countries will depend not only on supply factors (e.g., access to credit and investment capital), but also on the ability of these groups of countries to develop favorable trade arrangements with western countries. There is no doubt that Eastern Europe has been unable to negotiate as good conditions as those enjoyed by the newly industrializing countries, particularly in the case of the United States and Japan, two of the most vital markets for manufactured goods supplied by "newcomers".[61] With recent decisions (e.g., suspension of most-favored-nation status for Poland and cancellation of Romania's right to the Generalized System of Preferences by the United States), the situation has even deteriorated for Eastern Europe. Nor is the region in a position to assure, at least for the time being, that it will be treated equally in the recent round of quota reductions, affecting such crucial exports as steel and garments.

Eastern Europe will very likely remain in a disadvantageous position as an exporter of manufactured goods, also because, as already mentioned, it does not seem to be prepared to integrate more closely with multinational corporations, which in practice do most of the trade in manufactures. While the current export offensive by the newly industrializing countries benefits heavily from the presence of subsidiaries of western multinational corporations, with their distribution and service network, Eastern Europe continues to rely mostly on its own narrow channels. Instead of opening itself to direct investment, Eastern Europe promotes buy-back agreements, which can hardly be considered a noble substitute, due to the inflexibility of those arrangements and their conflictual nature (e.g., they are strongly opposed by the European Economic Community and the Organization for Economic Cooperation and Development as a threat to the free-trade idea [62]).

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[59] See: P. Marer, "Joint Ventures in Hungary, 1972–1983," School of Business, Indiana University, January 1984 (mimeograph).

[60] K. Poznanski, "Direct Investment by Multinational Corporations and Latin America," Ibid, estimate that direct western investment in Eastern Europe can be estimated at $64 million in 1983, while the cumulative value of such investment in Brazil was $21.2 billion in 1981.

[61] The recent moves by the U.S. Government reduced the amount of imports from the newly industrializing countries which, are subject to a duty-free entry to the United States under the Generalized System of Preferences, see: E. Lachica, "U.S. to Cut Duty Breaks to Mexico, Taiwan, and South Korea, Expand Other Benefits," Wall Street Journal, (Mar. 28, 1984), 37. This decision will affect imports valued at $11.9 billion, in which $3.7 billion from Mexico, $1.63 billion from Hong Kong and $1.76 billion from South Korea.

V. CONCLUSIONS

First, as the above data indicate, the recent effort to accelerate exports of manufactured goods to western markets, by Eastern Europe (and the Soviet Union as well, but to a lesser degree due to its small reliance on manufacturers) has met with an unforseen obstacle in the form of rapidly expanding exports of similar types of goods by the newly industrializing countries. In some export categories Eastern Europe had already been surpassed by the newly industrializing countries in the late sixties. These were mostly consumer manufactures, such as garments, radio receivers, and television sets, to which little East European investment was directed in the years before. Now, the newly industrializing countries lead in a large number of intermediate and capital goods as well (e.g., steel, ships). As the present evidence shows this more successful promotion of exports to the West by the newly industrializing countries, results in part from their faster technological modernization, which have already given them an edge over traditionally more advanced Eastern Europe in several industries.

Second, the seriousness of the recent threat from the newly industrializing countries does not result only from their proven technological ability to make the same simple manufactures which dominate Eastern Europeans supply to the West. It also stems from the fact that the latter do not show any superiority in advanced goods, such as synthetic drugs [53] or computers and peripherals, the latter group of products being closer analyzed in this paper. If the situation in other technologically complex products is not different from that in drugs and computers, than one can argue that, at least in the short-run, Eastern Europe has no choice but to compete with the newly industrializing countries in the area of unsophisticated products, where the latter have already proven more successful. This inability to quickly replace exports of traditional manufactures with advanced products fundamentally distinguishes Eastern Europe from most of the industrial countries of the West, where the trade in traditional manufactures—also threatened by the newly industrializing countries—is gradually giving way to more advanced products.

Third, the trends in Eastern European exports on western markets documented here clearly contradict most of the early projections that envisioned a flooding of the West with cheap manufactured goods made by the Eastern Europeans with the help of western technology and financing. Even if there were no trade squeeze and reorientation (i.e., switch to the Soviet market), as is taking place now, Eastern Europe would be in no position to flood the western market for manufactures in the coming years. This is because the fundamental precondition for large-scale export expansion by Eastern Europe to the Western markets has become over the last years the ability of its industry to compete with the exporters from newly industrializing countries. This ability, we have shown, Eastern Europe clearly lacks.

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[62] See: "East-West Recent Developments in Countertrade," (Paris: OECD, 1981), 29–30.

[63] The weakness of Eastern Europe is, in part, rejected by the fact that its market position in the West has been eroded in the last years. In 1970, Eastern Europe accounted for 0.9 percent of the OECD imports of medicinal and pharmaceutical products but in 1980 the respective share was 0.4 percent only. This contrasted with the substantial improvement reported by the newly industrializing countries, namely from 1.1 percent in 1970 to 2.5 percent in 1981.

Fourth, this analysis provides an additional argument for the superiority of the export-oriented—and one should add foreign investment-oriented—economies over those geared to import substitution and to an autarkic policy of economic growth. Other authors have demonstrated that the former policy has enabled the group of newly industrializing countries to perform better than those of the non-oil and gas rich countries from the developing world, which embarked on the import-substitution policy, India and Pakistan being good cases in point (see A. Krueger [64]). The evidence presented here indicates that the recent record of the newly industrializing countries is also superior—at least in technological terms—to that of the centrally planned economies of Eastern Europe, which have recently tried to depart—slightly and rather inconsistently—from their deeply rooted autarkic tendencies (see comment by: P. Marer [65]).

Fifth, considering the nature of the obstacles to Eastern European trade with the West, one can argue that the policy experiments by Eastern Europe and western countries during the seventies have by and large, lost their practical value and need reevaluation. Trade concessions by western countries, although important, are not of essential significance any more, nor is the limited liberalization of foreign trade procedures by the Eastern Europeans in the last decade. To reverse the current and unfavorable trends in manufacture exports, more fundamental changes are needed, particularly ones which could better integrate the region with the international financial and capital markets (i.e., direct investment). All require at least partial reinstitution of a uniform exchange rate system and convertibility on the part of Eastern Europe, as well as de-bureaucratication of the economic system.

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[64] A. Krueger, "The Effects of Trade Strategies on Growth," Finance & Development, (June 1983), 7.

[65] P. Marer, "Eastern European Economies: A Region in Crisis," conference paper for the Annual Meeting of the Association for Comparative Economic Studies, Washington, D.C., Dec. 29, 1981.

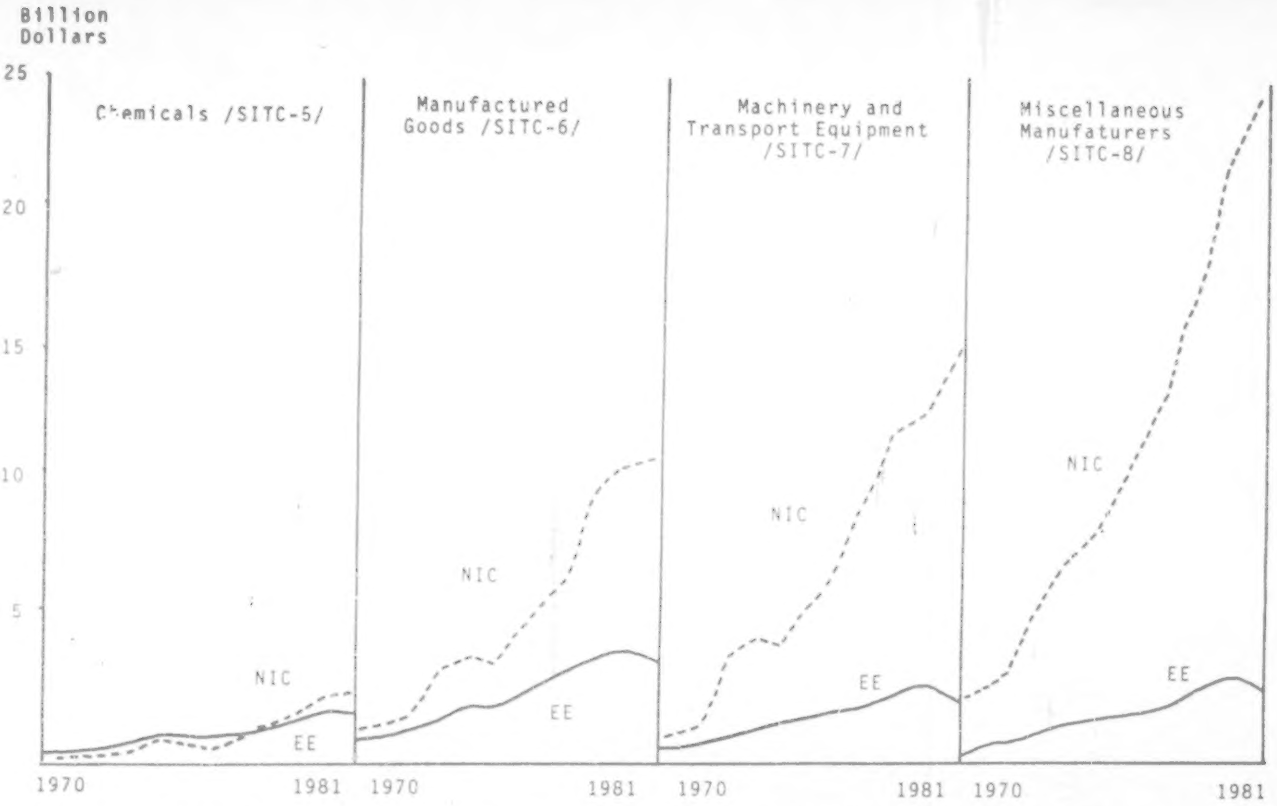

FIGURE 1 EXPORTS OF MANUFACTURED GOODS TO THE OECD COUNTRIES BY EASTERN EUROPE /EE/ AND THE NEWLY INDUSTRIALIZING COUNTRIES /NIC/, 1970-1981 /IN CURRENT PRICES/

Source : Trade by Commodities, Imports, 1981, /Paris: OECD, 1983/

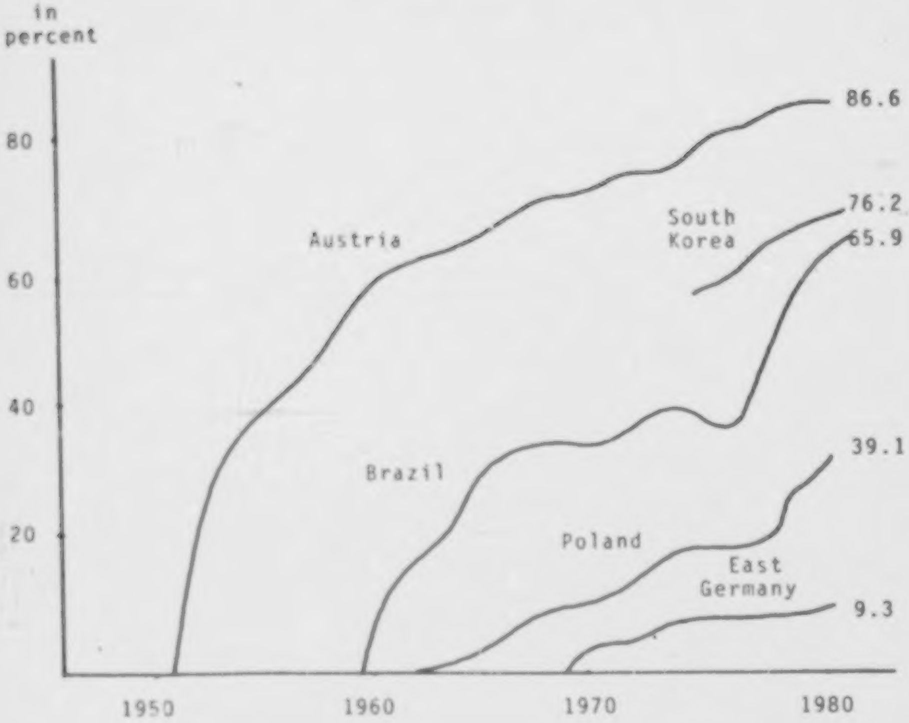

FIGURE 2 SHARE OF OXYGEN-BLOWN STEEL IN THE TOTAL OUTPUT OF STEEL /INGOTS/ IN SELECTED COUNTRIES, 1952-1980

Source : K.Poznanski, International Diffusion of Steel Technologies: Time-Lag and the Speed of Diffusion, Technological Forecasting and Social Change, No. 23 /1983/ ; and Iron and Steel Industry, General Report, /Geneva: International Labor Office, 1981/

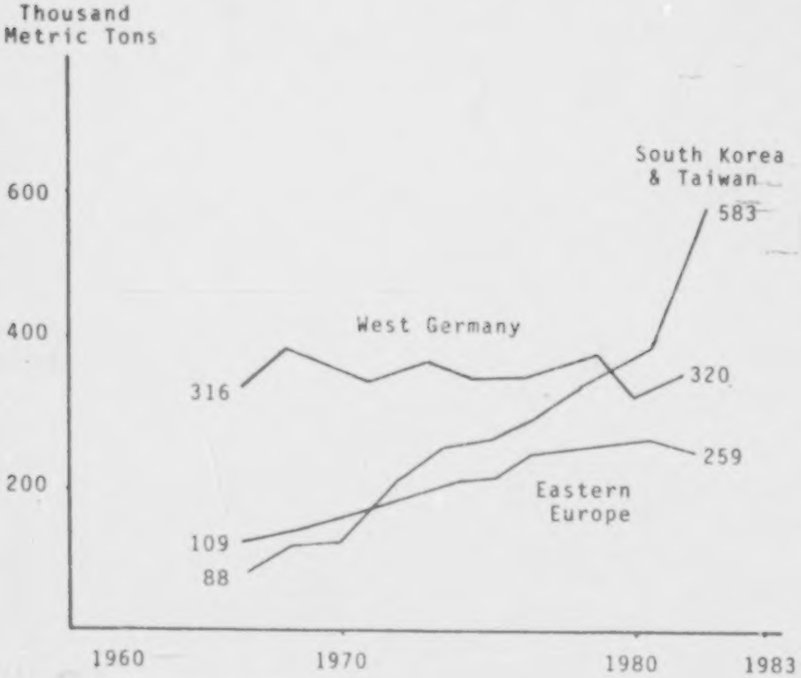

FIGURE 3 TOTAL PRODUCTION OF NON-CELLULOSIC CONTINUOUS FIBERS IN WEST GERMANY, EASTERN EUROPE, SOUTH KOREA AND TAIWAN, 1965-1981

Source : Yearbook of International Statistics, /New York: United Nations/, various years ; Monthly Statistics of the Republic of China, various issues from 1979-1982

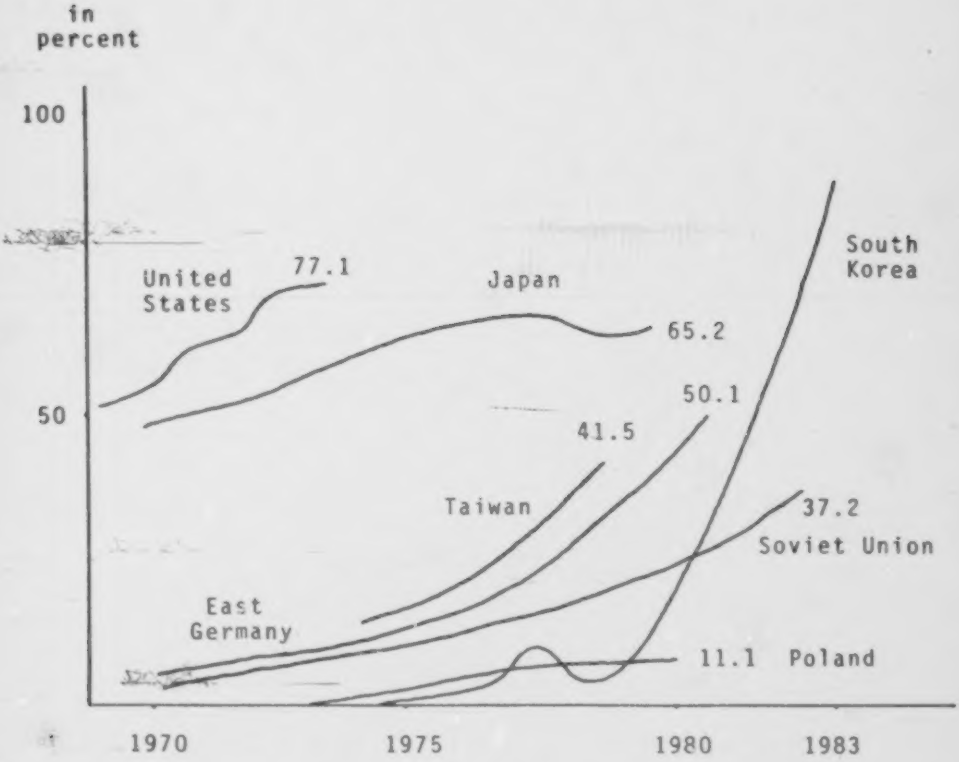

FIGURE 4 SHARE OF COLOR TELEVISION SETS IN THE TOTAL OUTPUT OF SELECTED COUNTRIES, 1970-1983

Source : 1/ For the Soviet Union, J.Cooper, Is there a technological gap between East and West, conference paper, The East-West Economic Relationship in a Changing World Economy, Canadian Institute of International Affairs, Toronto,/13-14 June 1984/
2/ For South Korea, Monthly Statistical Bulletin, The Bank of Korea, Seul, Vol. XXXVIII, /30 April, 1984/
3/ For East Germany, Statistical Pocket Book of the German Democratic Republic, Berlin /1982/
4/ Other countries, Rocznik Statystyczny GUS, Warsaw, /1983/

QUANTIFICATION OF WESTERN EXPORTS OF HIGH-TECHNOLOGY PRODUCTS TO COMMUNIST COUNTRIES

By John A. Martens [*]

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SUMMARY

A general impression exists that advanced technology items form a very large part of U.S. and other Western country exports to the communist countries.

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[*] Trade Research Division, Office of Trade and Investment Analysis, International Trade Administration, U.S. Department of Commerce. This report is an analytic document and should not be construed as a statement of Department of Commerce policy.

This paper quantifies U.S. and other Industrial West (I.W.)[1] exports to communist countries of high-technology products in the machinery, transportation equipment, and instrumentation categories. U.S. and I.W. exports of these products are measured and compared with total U.S. and I.W. exports to communist countries. Data also are provided on exports to communist countries processed under validated licenses. For the reasons outlined in the body of the study, the method used probably overstates the volume and importance of Western technology transfer to communist countries.

The analysis in this paper reveals that:

—Communist countries, taken together, purchase a relatively small share of total I.W. high-technology products exports (approximately 4-7 percent);

—The share of high-technology products in total I.W. exports to communist countries, 10.5 percent in 1982, is less than the high-technology products share in I.W. exports to the world (13.3 percent in 1982);

—The share of high-technology products in I.W. exports to communist countries—both during the past rapid expansion of trade and the more recent decline—has remained relatively constant;

—The United States ranks tenth among the 16 I.W. countries in export of high-technology products to the Soviet Union (1.5 percent in 1982) but is the second leading I.W. exporter of high-technology products to the People's Republic of China (P.R.C.) (21.2 percent in 1982). In contrast, the U.S. share in 1982 of I.W. high-technology products exports to the world was 26.6 percent;

—U.S. high-technology products exports in 1982 were only a small part (4.5 percent) of total U.S. exports to communist countries; whereas, U.S. high-technology products exports are a much larger share (18.7 percent) of total U.S. exports to the world; and

—The exports made during the mid-1970s under approved export licenses were also only a small part (3.8 percent) of total U.S. exports to communist countries. Thus, the share of total U.S. exports judged to have enough potential application to the communist countries' military-industrial production to merit evaluation and licensing is also quite small.

From this analysis, one can reasonably conclude that:

—The portion of I.W. exports to communist countries that is "high technology" is about the same as the high-technology portion of I.W. exports to the rest of the world; and

—Communist countries have consistently purchased most of their high technology products from sources outside of the United States.

U.S. and COCOM export control regulations significantly (and appropriately) restrict or eliminate exports to communist countries of certain advanced products and technologies. However, the small proportion of exports requiring a validated license, combined with the remarkable similarity between the overall purchasing patterns of Yugoslavia (a noncontrolled country) and other communist countries, suggests that export control regulations may not severely diminish potential I.W. export of nonstrategic high-technology products in the aggregate.[2]

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[1] The 17 Industrial Western countries are: the United States, Canada, Japan, Belgium-Luxembourg, France, Federal Republic of Germany (F.R.G.), Italy, Netherlands, Austria, Norway, Sweden. Switzerland. United Kingdom. Denmark. Finland. and Ireland

I. INTRODUCTION

Much Western discussion of East-West economic relations presumes that the composition of Western exports to communist countries differs markedly from Western exports to other advanced Western countries or to developing countries. In particular, communist country governments are said to be acquiring unusually large amounts of advanced Western technology through commercial channels. Some see this effort to be motivated not by a desire to foster long-term expansion in East-West relations based on normal principles of comparative advantage, but instead by a need to shore up stagnating communist economies with a one-time infusion of Western technology. By this interpretation, the West is reaping only transitory economic gains while risking the creation of strong potential competitors on world markets, shoring up undesirable political regimes, and endangering Western military security through the indirect build-up of the military industrial capability of communist adversary countries.

While it is true that Western countries have exported significant quantities of machinery, chemicals, and other manufactured goods to communist countries—products which traditionally have been viewed as embodying advanced technology—this analysis indicates that the composition of Western exports to communist countries through normal trade channels, in aggregate terms, does not differ significantly from the general pattern of Western exports to the world as a whole.

II. MEASURING INTERNATIONAL TECHNOLOGY FLOWS

1. The Usefulness of International Trade Data

Technology is commonly defined as "the application of scientific knowledge to practical purposes," or more generally as "know-how." The transfer of technology, then, involves the transfer of capability, an inherently difficult process to measure, particularly for transfers of disembodied technology.[3] However, we believe that an analysis of international trade flows can provide useful insights into the overall export of Western technology (embodied and disembodied), since the level of trade in high-technology products very likely reflects the relative flows of most kinds of technology transfers among countries.

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[2] Foreign policy considerations and a revision in U.S. strategic thinking have recently lead to an increase in the number of U.S. products which require validated export licenses for shipment to the U.S.S.R. The present analysis, however, refers to earlier licensing criteria that reflects more closely the relationship between general COCOM licensing requirements and our definition of high-technology products.

[3] A production technique incorporated in a physical product is said to be "embodied technology." For example, a new technique incorporated in a more productive model in a series of machinery represents embodied technological advance; a new technique permitting more productive utilization of an existing model of machinery represents disembodied technological advance.

In other words, international trade in categories that contain a large proportion of high-technology items is quite likely accompanied by and reflects other types of technology transfers, because:

- —In purchasing high-technology goods, communist country technical specialists ordinarily have extensive contact—often in training programs—with the specialists of the Western supplier;
- —High-technology product shipments to the East are often linked with larger, more involved business deals; e.g., turnkey projects where significant transfers of technical know-how take place;
- —High-technology products often embody capabilities previously absent in communist industry; and
- · Transfers of commercial technology without associated products are probably relatively rare.

The use of international trade data for measuring technology flows is not without problems, for imprecisions necessarily result from the way trade data are collected and classified. First, international trade data are not sufficiently detailed to distinguish precisely between levels of technology. For example, at the level of greatest disaggregation provided by UN data in the "Office Machine" category, SITC 7142 includes both electronic computers of varying degrees of sophistication and more mundane calculating and accounting machines.[4] Thus, there is difficulty in deciding exactly which categories of products should be considered as embodying, or having a potential for embodying, high technology. There is no generally accepted list of such products, and any listing changes over time with the advancement of technology in different areas. Second, because it probably contains some mundane, low-technology items, any set of trade data categories tends to overstate the volume of exports embodying truly advanced technology in individual item categories. Finally, some products in a category omitted from a selected list of high-technology items might incorporate critical inputs embodying advanced technology, thereby possibly justifying their inclusion on the list.

Further imprecisions arise from the way international trade data are aggregated. All international trade data, to be combined, must be converted into a common currency. Since the exchange rates for the I.W. currencies have varied considerably relative to the U.S. dollar over the past decade, the choice of the U.S. dollar as a common currency may alter somewhat the depiction of the underlying trends in high-technology products trade. Thus, the measured rates of growth in trade or a country's market share may vary with the choice of a particular common currency or with the extent to which exchange rates have changed. We have found that the effects from exchange rates do not alter greatly our general conclusions.

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[4] This paper uses the Standard International Trade Classification (Revision 1) to analyze the trade in high-technology products over a number of years. The newer SITC (Revision 2) contains more categories for office machinery. Using the newer system would, however, be only a change in degree, for trade data are inherently unable to make the qualitative distinctions required in assessing various technical levels.

2. The Method of Analysis

Notwithstanding the above shortcomings, useful insights on the export of Western technology can be derived from analysis of international trade data. Reflecting the interest in industrial plant and equipment, some earlier analyses have classified as "high-technology" all products placed in SITC Classification 7 (Machinery and Transport Equipment) and SITC 86 (Professional, Scientific, and Controlling Instruments). While these may be appropriate general categories for analyses, results can be improved by disaggregating to those 4- and 5-digit product categories that are likely to contain products embodying world "best practice" in critical technologies. Such exports may be expected to make a proportionately greater contribution to advance the recipient country's state-of-the-art. To improve upon the previous analyses, a refined list of high-technology products was derived by ITA's Office of Trade and Investment Analysis in consultation with commodity specialists in the Office of Export Administration. This more refined definition of high-technology items is presented in table 1. Product categories in SITC 7 and 86 that were excluded from this list are presented in Appendices A and B.[5]

TABLE 1.—*Items defined as high-technology for this analysis*

Description:	*SITC*
Jet and gas turbines for aircraft	71142
Nuclear reactors	7117
Calculating machines (including electronic computers)	7142
Statistical machines (punch card or tape)	7143
Parts of office machinery (including computer parts)	71492
Machine tools for metal	7151
Glass-working machinery	71852
Pumps and centrifuges	7192
Parts and accessories for machine tools	71954
Ball, roller or needle-roller bearings	7197
Cocks, valves, etc	71992
Telecommunications equipment (excl. TC and radio receivers)	7249
X-ray apparatus	726.2
Primary batteries and cells	72911
Tubes, transistors, photocells, etc	7293
Electrical measuring and control instruments	72952
Electron and proton accelerators	7297
Electrical machinery, n.e.s. (including electromagnets, traffic control equipment, signalling apparatus, etc.)	7299
Aircraft, heavier than air	7341
Aircraft parts	73492
Warships	7351
Special purpose vessels (including submersible vessels)	73592
Optical elements	8611
Optical instruments	8613
Image projectors (might include holograph projectors)	86161
Measuring and control instruments, n.e.s	8619
Photographic film	862.4
Gramophones, tape recorders, etc. (video recorders	891.1(1)

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[5] A number of other definitions of high-technology trade were developed in the recent Commerce Department publication, "An Assessment of U.S. Competitiveness in High Technology Industries." These definitions were constructed for an overall analysis of U.S. trade performance in commercially important high technologies. The present study's definition is more limited and addresses only trade in products of potential strategic importance.

III. EXPORT COMPOSITION AND TRENDS

Utilizing the above definition of high-technology products, data are presented in this section on the export of these commodities by the United States and the Industrial West (I.W.) to communist countries.[6] Given acceptance of earlier arguments on the validity of using commodity export data as a reasonable proxy for the general export of technology, these data enable:

- —Determination of the commodity and technical composition of technology exports;
- —Identification of trends in the volume of technology exports;
- —Comparison of the volume and importance of technology exports to communist countries with the volume and importance of technology exports in world trade as a whole; and
- —Determination of the relative importance of alternative Western sources of technology to communist countries.

In fact, as a proxy for generalized technology transfer, commodity export data almost certainly overstate the relative volume of I.W. technology transfers to communist countries in comparison with transfers to other destinations. The overstatement from export data is likely because literature, people, and other means of technology transfer move more freely among Western countries than among communist and non-communist countries, and thereby probably account for a higher share of overall technology transfer between Western countries than between West and East.

1. Communist Country Shares of I.W. High-Technology Exports

Figure 1 depicts I.W. high-technology products exports to communist countries and the world as a whole. Communist countries receive a small share of total I.W. high-technology products exports—4.7 percent in 1970 and 3.7 percent in 1982. This suggests that communist countries have not been and are not likely to become such a dominant force in the marketplace that they could exert significant pressure on Western suppliers of advanced technology, even assuming that communist countries would (or could) act collectively.

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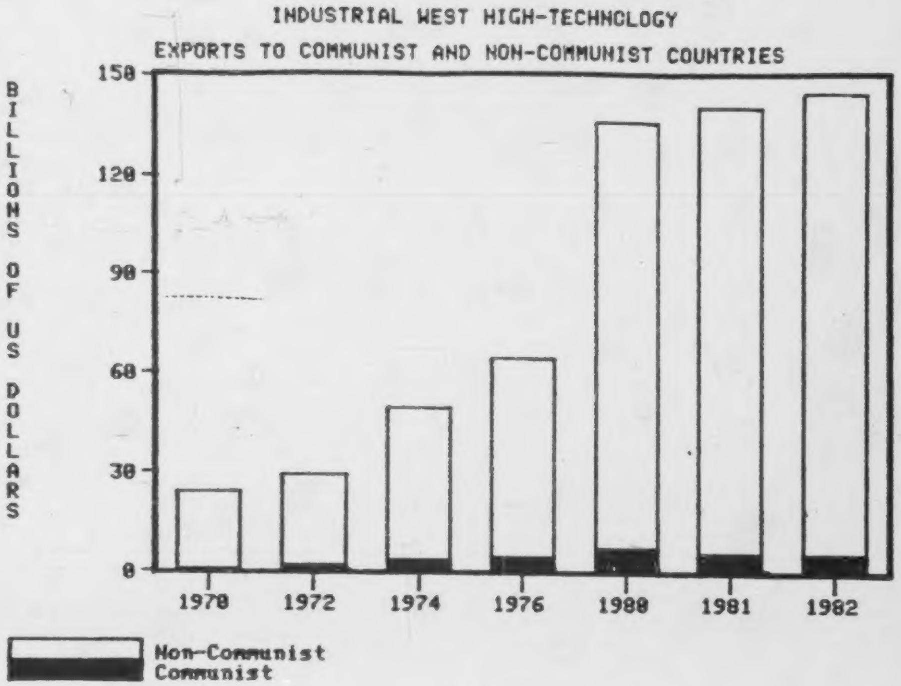
[6] Bulgaria, Cuba, Czechoslovakia, German Democratic Republic (G.D.R.), Hungary, Poland, P.R.C., Romania, U.S.S.R., Yugoslavia, Vietnam, Mongolia, Albania and North Korea.

Figure 1



The share of high-technology products in total I.W. exports to the world is roughly equal to the share of high-technology products in total I.W. exports to the world. The relative shares of I.W. manufactured goods exports are also roughly equivalent. (See table 2.) In 1982, high-technology products exports to communist countries accounted for 14.3 percent of manufactured goods exports and 10.5 percent of total exports; somewhat less than the respective shares of high-technology products in exports to the world of 17.5 percent and 13.3 percent.

TABLE 2.—COMPARISON OF HIGH-TECHNOLOGY EXPORTS WITH MANUFACTURED GOODS AND TOTAL GOODS EXPORTS—17 I.W. COUNTRIES TO THE COMMUNIST COUNTRIES AND TO THE WORLD: 1970, 1980, 1981, 1982

[U.S. dollars in millions]

	1970		1980		1981 [1]		1982	
		Percent of		Percent of		Percent of		Percent of
I.W. exports to:								
U.S.S.R.:								
High technology	$402.9	....	$2,330.3	....	$1,774.4	....	$2,145.7	....
Manufactured goods	2,212.4	18.2	15,113.1	15.4	14,183.1	12.5	15,641.3	13.7
Total	2,490.8	16.2	19,837.5	11.7	20,564.2	8.6	21,706.2	9.9
Eastern Europe:								
High technology	414.0	....	2,194.2	....	1,737.5	....	1,486.7	
Manufactured goods	2,758.7	15.0	14,138.5	123.7	10,925.3	15.4	9,273.9	16.8
Total	3,522.7	11.8	19,460.9	11.3	16,087.9	10.8	12,425.7	12.0
Yugoslavia:								
High technology	219.6	....	1,181.0	....	952.9	....	782.5	
Manufactured goods	1,655.1	13.3	6,813.3	17.3	5,642.7	16.7	4,672.9	16.8
Total	1,871.7	11.7	7,931.3	14.9	6,679.5	7.3	784.9	8.0
Cuba:								
High technology	18.7	....	77.6	....	87.1	....	47.0	....
Manufactured goods	261.2	7.2	698.7	11.1	692.6	12.6	361.8	13.0
Total	332.9	5.6	1,302.7	6.0	1,191.7	7.3	784.9	6.0
P.R.C.:								
High technology	104.3	....	1,073.4	....	1,039.9	....	781.4	....
Manufactured goods	1,062.9	9.8	8,905.0	12.1	8,043.5	12.9	6,643.5	11.8
Total	1,232.6	8.5	12,440.2	8.6	11,913.0	8.7	9,760.1	8.0
Total all Communist countries:								
High technology	1,172.4	....	6,934.2	....	5,649.5	....	5,315.8	....
Manufactured goods	8,009.5	14.6	46,144.3	15.0	39,916.1	14.2	37,136.8	14.3
Total	9,521.9	12.3	61,517.9	11.3	56,990.7	9.9	50,858.3	10.5
World:								
High technology	24,770.9	....	136,205.3	....	140,750.4	....	144,788.0	....
Manufactured goods	162,940.1	15.2	892,324.8	15.3	867,224.6	16.2	825,540.9	17.5
Total	211,644.5	11.7	1,173,144.0	11.6	1,150,371.2	12.2	1,093,046.8	13.3

[1] 1981 data include only estimates of United Kingdom exports.

Note.—While the total volume of I.W. exports to the world as a whole and to communist countries increased dramatically in the 1970s, there was no discernible trend suggesting that I.W. high-technology products exports to communist countries were increasing as a portion of total I.W. exports to communist countries. In 1970, the share of high-technology products in exports to communist countries was 12.3 percent; in 1978, it was 13.7 percent, and in 1982, 10.5 percent. The volume of I.W. high-technology products exports to Eastern Europe and the U.S.S.R. has declined in recent years. The decreases in East European purchases began in 1979 and probably reflect hard currency shortages brought on by OPEC's large price increases of that same year. Soviet purchases dropped in 1981, possibly reflecting hard currency pressures caused by softening of world oil prices, financial aid to Poland, increased grain imports and continued sizeable imports of steel pipe. Soviet purchases of high-technology products rebounded somewhat in 1982, but still remained lower than the levels of purchases recorded earlier.

Source: Department of Commerce from U.N. Series D Trade Data.

In short, when compared with I.W. exports to the world, high-technology products do not dominate in exports to communist countries, are not large in volume, and are not experiencing any marked shift in relative importance.

2. Relative Importance of Individual High-Technology Categories in East-West Trade

Table 3 lists the top 1982 I.W. high-technology exports to the communist country group. The top five items, which accounted for 60.8 percent of the 1982 total, have dominated I.W. high-technology exports to communist countries for a number of years. The importance of machine tools (many adapted for numerical or computer numerical control) and control instruments reflects communist country drives to mechanize and automate production processes. The lesser significance of electronic, communication, and aircraft categories partly reflects the impact of Western export controls. Tables 4 and 5 provide rank order listings of I.W. high-technology exports to the U.S.S.R. and P.R.C., respectively. The ranking of Soviet import categories changed little from 1980 to 1982, reflecting both the larger number of Soviet transactions and the relatively better developed I.W.—U.S.S.R. trading relationships. By contrast, single large P.R.C. purchases markedly affect year-to-year commodity rankings.

TABLE 3.—1981 I.W. HIGH TECHNOLOGY EXPORTS TO COMMUNIST COUNTRIES

[Dollars in millions]

		1970			1980			1981 [2]			1982		
		Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports
7151	Machine tools for metal	1	$329.2	3.5	1	$1,486.8	2.4	1	$1,040.7	1.8	1	961.2	1.9
7192	Pumps and centrifuges	2	136.8	1.4	2	1,063.1	1.7	2	911.3	1.6	2	693.1	1.4
7299	Electrical machinery, n.e.s	3	127.6	1.3	3	857.5	1.4	3	651.6	1.1	3	569.8	1.1
71992	Cocks, valves, etc	7	52.7	.6	4	602.1	1.0	5	487.4	.9	4	547.8	1.1
72952	Electrical measuring and control instruments	4	86.8	.9	5	559.5	.9	4	497.8	.9	5	464.6	.9
8619	Measuring and control instruments, n.e.s	5	70.6	.7	6	355.6	.6	6	300.4	.5	6	303.6	.6
73592	Special purpose vessels (including submersible vessels)	16	9.5	.1	8	256.4	.4	10	167.1	.3	7	296.4	.6
7249	Telecommunications equipment (excluding TV and radio receivers)	6	64.4	.7	7	301.4	.5	7	267.8	.5	8	290.4	.6
7143	Statistical machines (punch card or tape)	9	41.7	.4	9	237.4	.4	8	218.0	.4	9	193.4	.4
71954	Parts and accessories for machine tools	11	31.2	.3	10	218.2	.4	9	196.2	.3	10	181.8	.4
7293	Tubes, transistors, photocells, etc	23	2.6	(1)	12	137.2	.2	11	163.0	.3	11	125.4	.3
7197	Ball, roller or needle-roller bearings	8	43.3	.5	11	148.6	.2	12	132.3	.2	12	125.2	.3
71492	Parts of office machinery (including computer parts)	13	20.0	.2	13	129.5	.2	13	99.7	.2	13	97.7	.2
8624	Photographic film	14	17.3	.2	14	107.7	.2	14	86.1	.2	14	75.9	.2
73492	Aircraft parts	21	2.9	(1)	17	61.5	.1	15	81.1	.1	15	68.9	.1
7262	X-ray apparatus	18	8.3	.1	16	82.9	.1	16	79.0	.1	16	63.4	.1
71142	Jet and gas turbines for aircraft	17	9.4	.1	19	47.7	.1	17	73.5	.1	17	61.3	.1
89111	Gramophones, tape recorders, etc. (including video recorders)	20	6.5	.1	18	52.3	.1	19	49.7	.1	18	53.1	.1
8613	Optical instruments	19	7.5	.1	20	45.0	.1	20	46.9	.1	19	52.6	.1
71852	Glass-working machinery	15	12.7	.1	15	95.0	.2	18	72.5	.1	20	35.0	.1
7341	Aircraft, heavier than air calculating machines (including computer parts).	10	37.8	.4	21	22.6	(1)	22	17.0	(1)	22	17.7	(1)
8611	Optical elements	22	2.8	(1)	24	12.6	(1)	24	11.9	(1)	23	13.6	(1)
72911	Primary batteries and cells	24	1.7	(1)	23	15.1	(1)	23	12.3	(1)	24	8.8	(1)
86161	Image projects	25	1.4	(1)	26	7.2	(1)	25	7.6	(1)	25	4.5	(1)
7297	Electron and proton accelerators	26	0.2	(1)	27	.5	(1)	26	6.8	(1)	26	2.1	(1)
7117	Nuclear reactors	27	(1)	(1)	25	10.1	(1)	27	1.2	(1)	27	0.3	(1)
	High technology exports		1,172.2			6,934.2			5,649.5			5,315.8	
	Total exports		9,521.9			61,517.9			5,699.7			50,858.3	
	High technology exports as a percent of total exports			12.3		11.3			9.9				10.5

[1] Negligible.

[2] 1981 data are based on estimates of U.K. exports.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

TABLE 4.—1982 I.W. HIGH TECHNOLOGY EXPORTS TO THE U.S.S.R.

[Dollars in millions]

		1970			1980			1981			1982 [2]		
		Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports
7151	Machine tools for metal	1	$173.9	7.0	1	$749.4	3.8	1	$471.2	2.3	1	$524.3	2.4
71992	Cocks, valves, etc	9	11.4	.5	3	300.1	1.5	3	214.2	1.0	2	362.5	1.7
7299	Electrical machinery, n.e.s.	2	58.4	2.3	4	270.7	1.4	2	246.5	1.2	3	241.3	1.1
7192	Pumps and centrifuges	4	22.2	.9	2	307.1	1.6	4	177.9	.9	4	231.6	1.1
73592	Special purpose vessels (including submersible vessels)	10	8.9	.4	6	101.8	.5	9	77.6	.4	5	217.1	1.0
72952	Electrical measuring and control instruments	3	34.0	1.4	5	176.5	.9	5	160.7	.8	6	161.5	.7
8619	Measuring and control instruments, n.e.s	5	20.5	.8	7	97.8	.5	8	80.8	.4	7	89.4	.4
71954	Parts and accessories for machine tools	8	11.6	.5	8	85.6	.4	7	83.4	.4	8	85.5	.4
7249	Telecommunications equipment (excluding TV & radio receivers)	6	17.0	.7	10	51.5	.3	10	54.6	.3	9	63.0	.3
7143	Statistical machines (punch card or tape)	7	12.4	.5	9	57.2	.3	6	86.4	.4	10	52.7	.2
71492	Parts of office machinery (including computer parts)	14	3.8	.2	14	14.3	.1	14	15.3	.1	11	24.0	.1
7197	Ball, roller or needle-roller bearings	11	6.7	.3	13	18.4	.1	11	19.2	.1	12	21.9	.1
8613	Optical instruments	16	2.3	.1	15	13.7	.1	15	13.7	.1	13	19.2	.1
8624	Photographic film	18	1.6	.1	17	12.1	.1	16	12.2	.1	14	12.2	.1
7262	X-ray apparatus	15	2.3	.1	12	18.8	.1	13	16.2	.1	15	11.9	.1
89111	Gramophones, tape recorders, etc. (including video recorders)	19	1.2	(1)	16	13.2	.1	17	8.6	(1)	16	9.8	.1
7293	Tubes, transistors, photocells, etc	17	1.7	.1	18	7.3	(1)	18	6.8	(1)	17	6.9	(1)
71852	Glass-working machinery	13	5.1	.2	11	20.9	.1	12	16.3	.1	18	3.0	(1)
72911	Primary batteries and cells	24	.1	(1)	19	5.2	(1)	20	3.7	(1)	19	2.3	(1)
8611	Optical elements	20	.8	(1)	21	2.1	(1)	22	1.2	(1)	20	2.0	(1)
7142	Calculating machines (including computer parts)	12	6.2	.2	20	2.7	(1)	23	1.1	(1)	21	1.4	(1)
86161	Image projectors	21	.3	(1)	23	1.4	(1)	19	5.6	(1)	22	1.1	(1)
71142	Jet and gas turbines for aircraft	22	.2	(1)	22	2.0	(1)	26	(1)	(1)	23	.4	(1)
7117	Nuclear reactors				24	.6	(1)	25	.1	(1)	25		(1)
7341	Aircraft, heavier than air				25	.1	(1)	27		(1)	26		(1)
7297	Electron and proton accelerators	23	.2	(1)	25	.1	(1)	21	3.0	(1)	27	-	(1)
	High technology exports		402.9			2,330.3			1,774.4			2,145.7	
	Total exports		2,490.8			19,837.5			20,564.2			21,706.2	
	High technology exports as a percent of total exports			16.2			11.8			8.6			9.9

[1] Negligible.

[2] 1982 data are based on estimates of Netherlands exports.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

TABLE 5.—1981 I.W. HIGH TECHNOLOGY EXPORTS TO THE P.R.C.

[Dollars in millions]

		1970			1980			1981			1982 [2]		
		Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports	Rank	Value	Percent of total exports
72952	Electrical measuring and control instruments	5	4.5	0.4	2	150.9	1.2	2	161.5	1.4	1	153.0	1.6
7192	Pumps and centrifuges	3	16.3	1.3	1	225.0	1.8	1	297.0	2.5	2	79.3	.8
8619	Measuring and control instruments, n.e.s	4	7.3	.6	7	55.5	.4	5	68.1	.6	3	73.0	.8
7143	Statistical machines (punch card or tape)	19	.1	(1)	6	65.6	.5	6	65.2	.6	4	71.0	.7
7151	Machine tools for metal	1	45.9	3.7	3	131.6	1.1	3	88.2	.7	5	56.9	.6
7249	Telecommunications equipment (excluding TV & radio receivers)	10	1.6	.1	9	43.6	.4	7	53.2	.5	6	52.5	.5
73592	Special purpose vessels (including submersible vessels)				4	113.1	.9	24	1.6	(1)	7	45.6	.5
7293	Tubes, transistors, photocells, etc	14	.2	(1)	11	21.5	.2	8	47.0	.4	8	32.4	.3
7299	Electrical machinery, n.e.s	6	3.0	.2	5	72.9	.6	9	46.8	.4	9	28.4	.3
89111	Gramophones, tape recorders, etc. (including video recorders)	17	.1	(1)	17	10.7	.1	13	16.3	.1	10	23.9	.2
7262	X-ray apparatus	13	.4	(1)	15	14.7	.1	12	18.3	.2	11	22.1	.2
71992	Cocks, valves, etc	11	.8	.1	8	50.7	.4	4	79.7	.7	12	21.6	.2
73492	Aircraft parts	15	.2	(1)	14	15.6	.1	15	9.3	.1	13	21.4	.2
8613	Optical Instruments	7	2.8	.2	13	17.1	.1	10	22.8	.2	14	20.9	.2
71142	Jet and gas turbines for aircraft	16	.1	(1)	16	14.0	.1	11	18.5	.2	15	16.0	.2
71492	Parts of office machinery (including computer parts)	21	(1)	(1)	12	20.6	.2	14	13.5	.1	16	15.8	.2
7142	Calculating machines (including computer parts)	20	.1	(1)	18	6.7	.1	16	8.6	.1	17	11.6	.1
7341	Aircraft, heavier than air				26	0.2	(1)	23	3.5	(1)	18	9.6	.1
7197	Ball, roller or needle-roller bearings	2	17.1	1.4	20	6.3	.1	17	7.1	.1	19	9.0	.1
71954	Parts and accessories for machine tools	9	1.6	.1	19	6.5	.1	18	6.3	.1	20	5.6	.1
8624	Photographic film	8	1.8	.1	22	2.7	(1)	21	3.7	(1)	21	4.4	(1)
8611	Optical elements	12	.4	(1)	21	2.9	(1)	22	3.6	(1)	22	3.4	(1)
71852	Glass-working machinery	22	(1)	(1)	10	23.3	.2	19	4.3	(1)	23	2.2	(1)
7297	Electron and proton accelerators				23	0.9	(1)	20	3.8	(1)	24	1.9	(1)
86161	Image projectors	18	0.1	(1)	25	0.7	(1)	25	.7	(1)	25	.8	(1)
72911	Primary batteries and cells				23	0.9	(1)	26	.3	(1)	26	.2	(1)
7117	Nuclear reactors				27		(1)	27		(1)	27		(1)
	High technology exports		104.3			1,073.4			1,039.9			781.4	
	Total exports		1,232.6			12,440.2			11,913.0			9,760.1	
	High technology exports as a percent of total exports			12.3			8.6			8.7			8.0

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[1] Negligible.

[2] 1981 data are based on estimates of United Kingdom exports.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

3. Communist Purchases of Western High Technology: Sources and Relative Shares

Data presented in tables 6 through 9 illustrate the relative importance to the U.S.S.R. and P.R.C. of individual I.W. countries as suppliers of high-technology products and manufactured goods. For most I.W. countries, high-technology products constitute less than one-fifth of their total manufactured goods exports to the U.S.S.R. Switzerland, Sweden and Denmark are exceptions. In fact, over the past decade about 40 percent of Swiss manufactured exports to the U.S.S.R. were high-technology products. (See table 7.)

The EEC—led by West Germany—remains the primary source (51.7 percent of 1982 total) of Soviet imports of Western high-technology products. Japan, however, has consistently increased in importance as a supplier of Western high-technology products—from about 11 percent of 1970's total to over 18 percent of 1982's. Finland grew markedly in importance as a supplier of high-technology products, increasing its share of the I.W. total from 6.9 percent in 1981 to 17.5 percent in 1982. Although all but one category of Finnish high-technology product exports for 1982 increased in value over 1981 levels, the sale of several special purpose vessels—oil drilling ships, icebreakers, etc.—accounted for about three-fourths of Finland's large 1982 increase.

It is significant that the U.S. share of I.W. high-technology products exports to the U.S.S.R. has declined from levels posted in the early 1970's (13.3 percent in 1974 compared with 1.5 percent in 1982), while the U.S. share to the P.R.C. has increased considerably over the past 5 years (from 8.9 percent in 1978 to 21.2 percent in 1982). The recent decisions to increase U.S. controls on exports of technology to the Soviet Union and to relax U.S. controls on exports of technology to China will presumably reinforce this trend.

The pattern of I.W. exports to the P.R.C. reflects trends in emerging P.R.C. relations with I.W. countries. I.W. high-technology exports grew rapidly during the 1970s. Japan is clearly establishing its leadership in the PRC's high-technology market. In 1982 Japan's share of total I.W. high-technology product exports to the PRC (42.1 percent) was twice that of any other I.W. country.

Figures 2 through 7 compare the relative shares of total high-technology product exports to the communist countries and to the world for several major I.W. countries. Table 2 shows that the United State's share of total I.W. exports of high-technology products to the communist countries has consistently fallen below its share of high-technology exports to the world. The U.K.'s share of I.W. high-technology exports has also remained below its share of high-technology exports to the world, although to a smaller degree. The other major I.W. countries', especially the F.R.G.'s, shares of total I.W. high-technology exports to the communist countries have generally larger than their shares of total I.W. high-technology product exports to the world.

TABLE 6.—U.S.S.R. SOURCES OF I.W. HIGH-TECHNOLOGY PRODUCTS

[Dollars in millions]

	1970		1975		1980		1981		1982	
	High-technology exports to U.S.S.R.	As percent of total	High-technology exports to U.S.S.R.	As percent of total	High-technology exports to U.S.S.R.	As percent of total	High-technology exports to U.S.S.R.	As percent of total	High-technology exports to U.S.S.R.	As percent of total
Canada	$0.2		$14.4	0.9	$27.5	1.2	$0.4	0	$0.4	0
United States	12.5	3.1	219.2	13.5	84.7	3.6	56.5	3.2	32.1	1.5
Japan	43.5	10.8	169.2	10.4	400.2	17.2	366.0	20.0	378.2	17.6
Belgium-Luxembourg	5.9	1.5	26.5	1.6	18.0	.8	12.1	.7	15.4	.7
Denmark	4.8	1.2	13.4	.8	23.1	.1	17.9	1.0	21.8	1.0
France	58.5	14.5	223.7	13.8	341.3	14.8	204.7	11.5	191.6	8.9
Federal Republic of Germany	92.9	23.0	519.8	31.9	727.2	31.6	501.8	28.3	563.9	26.3
Ireland			.3		.2	(¹)	0	0	.3	0
Italy	69.6	17.3	155.7	9.6	222.2	9.6	156.3	8.8	233.8	10.9
Netherlands	1.1	.3	20.6	1.3	6.1	.3	10.0	.6	²8.7	.4
United Kingdom	56.0	13.9	51.7	3.2	125.7	5.5	132.5	7.5	96.9	4.5
Austria	5.6	1.4	27.4	1.7	48.2	2.1	30.4	1.7	47.4	2.2
Finland	6.3	1.6	35.9	2.2	86.2	3.7	121.8	6.9	375.6	17.5
Norway	.1		13.4	.8	12.3	.5	6.5	.4	9.6	.4
Sweden	22.3	5.5	51.3	3.2	71.1	3.1	77.3	4.4	63.7	3.0
Switzerland	23.6	5.9	83.0	5.1	136.4	5.9	80.0	4.5	106.5	5.0
Total	402.9	100.0	1,626.0	100.0	2,330.0	100.0	1,774.4	100.0	2,145.7	100.0

[1] Negligible.
[2] Estimated.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

TABLE 7.—U.S.S.R. SOURCES OF I.W. MANUFACTURED PRODUCTS

[Dollars in millions]

	1970		1975		1980		1981		1982	
	Manufactured exports to U.S.S.R.	High-technology as percent of manufactured	Manufactured exports to U.S.S.R.	High-technology as percent of manufactured	Manufactured exports to U.S.S.R.	High technology as percent of manufactured	Manufactured exports to U.S.S.R.	High technology as percent of manufactured	Manufactured exports to U.S.S.R.	High technology as percent of manufactured
Canada	$6.3	0.3	$43.2	[1] 33.3	$169.0	16.3	$53.5	0.7	$80.0	0.5
United States	83.1	15.1	670.4	32.7	423.7	20.0	586.0	9.6	598.4	5.4
Japan	327.7	13.3	1,558.4	10.9	2,607.8	15.3	3,091.5	11.8	3,737.7	10.1
Belgium-Luxembourg	50.0	11.7	330.7	8.0	490.5	3.7	327.5	3.7	370.0	4.2
Denmark	23.1	20.7	57.7	23.2	61.0	37.9	58.4	30.8	59.5	36.6
France	257.0	22.8	1,036.6	21.6	1,793.3	19.0	1,179.0	17.4	1,010.8	19.0
West Germany	412.6	22.5	2,777.7	18.7	3,904.5	18.6	2,877.3	17.4	3,430.8	16.4
Ireland			2.1	14.3	4.7	5.4	6.0	.8	9.6	2.7
Italy	292.3	23.8	982.9	15.8	1,176.3	18.9	1,151.0	13.6	1,380.3	16.9
Netherlands	33.0	3.3	165.3	12.5	204.0	3.0	213.9	4.7	[1] 228.2	3.8
United Kingdom	219.5	25.5	432.2	12.0	950.9	13.2	656.0	20.2	515.3	18.8
Austria	78.8	7.1	215.9	12.9	445.7	10.8	460.9	6.6	510.9	9.3
Finland	242.7	2.6	998.5	3.6	2,186.4	3.9	1,957.7	4.1	3,145.8	11.9
Norway	20.2	.6	90.9	14.7	94.6	13.0	87.5	7.5	73.7	13.0
Sweden	116.3	19.2	265.1	19.4	304.2	23.4	272.0	28.4	275.0	23.2
Switzerland	49.9	47.3	108.7	45.9	296.5	46.0	205.0	39.0	215.4	49.5
Total	2,212.4	18.2	9,808.4	16.6	15,113.1	15.4	14,183.1	12.5	15,641.3	13.7

[1] Estimated

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

TABLE 8.—PEOPLE'S REPUBLIC OF CHINA SOURCES OF I.W. HIGH-TECHNOLOGY PRODUCTS

[Dollars in millions]

	1970		1975		1980		1981		1982	
	High-technology exports to PRC	As percent of total	High-technology exports to PRC	As percent of total	High-technology exports to PRC	As percent of total	High-technology exports to PRC	As percent of total	High-technology exports to PRC	As percent of total
Canada	(1)	(1)	$0.6	0.1	$0.6	0.1	$1.5	0.1	$1.5	0.2
United States	0	0	48.4	8.4	130.6	12.2	124.5	12.0	165.3	21.2
Japan	$54.0	51.7	219.2	38.0	545.5	50.8	623.1	59.9	328.8	42.1
Belgium-Luxembourg	1.0	1.0	3.2	.6	2.8	.3	2.9	.3	4.1	.5
Denmark	.7	.6	4.5	.8	9.7	.9	5.6	.5	5.8	.7
France	5.6	5.4	74.7	12.9	66.4	6.2	49.4	4.7	59.4	7.6
West Germany	13.4	12.9	62.9	10.9	102.8	9.6	66.7	6.4	51.0	6.5
Ireland	0	0	.1	(1)	.2	(1)	.1	0	.1	(1)
Italy	8.2	7.9	10.5	1.8	20.4	1.9	21.5	2.1	6.8	.9
Netherlands	(1)	(1)	71.9	12.5	10.6	1.0	12.4	1.2	[2] 8.8	1.1
United Kingdom	7.5	7.2	42.6	7.4	105.5	9.8	65.6	6.3	61.3	7.8
Austria	.9	.9	2.1	.4	24.8	2.3	10.0	1.0	.6	.1
Finland	(1)	(1)	(1)	(1)	2.1	.2	.8	.1	.4	(1)
Norway	(1)	(1)	.3	.1	3.8	.4	.9	.1	1.0	.1
Sweden	1.6	1.5	7.4	1.3	14.2	1.3	12.4	1.2	7.5	1.0
Switzerland	11.3	10.8	28.7	5.0	33.4	3.1	42.5	4.1	78.9	10.1
Total	194.3	99.9	577.1	100.2	1,073.4	100.1	1,080.5	100.0	781.4	100.0

[1] Negligible.
[2] Estimated.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

TABLE 9.—PEOPLE'S REPUBLIC OF CHINA SOURCES OF I.W. MANUFACTURED PRODUCTS

[Dollars in millions]

	1970		1975		1980		1981		1982	
	Manufactured exports to PRC	High technology as percent of manufactured	Manufactured exports to PRC	High technology as percent of manufactured	Manufactured exports to PRC	High technology as percent of manufactured	Manufactured exports to PRC	High technology as percent of manufactured	Manufactured exports to PRC	High technology as percent of manufactured
Canada	17.3	(¹)	41.9	1.4	180.9	0.3	135.1	1.1	251.3	0.6
United States		0	202.8	23.9	1,223.5	10.7	1,134.9	11.0	1,066.7	15.5
Japan	554.3	9.7	2,158.4	10.2	4,832.0	11.3	4,791.8	13.0	3,291.9	10.0
Belgium-Luxembourg	20.1	5.0	45.3	7.1	84.2	3.3	75.7	3.8	179.6	2.3
Denmark	3.8	18.4	22.0	20.5	42.9	22.5	9.6	58.0	109.4	5.3
France	62.3	9.0	376.6	18.8	279.4	23.8	191.7	25.8	223.2	26.6
West Germany	163.0	8.2	515.2	12.2	1,11[illegible]	9.2	924.5	7.2	830.8	6.1
Ireland	(¹)	(¹)	.1	100.0	1.8	12.6	1.5	5.4	2.1	4.8
Italy	56.7	14.5	144.5	7.3	230.8	8.8	225.3	9.5	146.9	14.4
Netherlands	21.8	(¹)	131.5	54.7	230.8	8.8	225.3	9.5	93.8	9.4
United Kingdom	99.7	7.5	165.7	25.7	360.3	29.3	203.3	37.3	153.3	40.0
Austria	5.4	16.7	24.6	8.5	70.1	35.4	39.5	25.2	46.0	1.3
Finland	9.3	(¹)	11.5	(¹)	41.9	5.1	24.6	3.3	22.4	1.8
Norway	10.8	(¹)	105.5	.2	82.4	4.6	17.9	5.3	49.6	2.0
Sweden	17.9	8.9	37.3	19.8	75.7	18.8	55.5	22.4	44.3	16.9
Switzerland	20.8	54.3	56.3	51.0	139.3	24.0	123.6	34.4	130.0	60.7
Total	1,062.9	9.8	4,039.4	14.3	905.0	12.1	8,043.5	12.9	6,643.5	11.8

[1] Negligible.

Source: U.S. Department of Commerce from U.N. Series D Trade Data.

Table 10 presents U.S. high-technology products exports, manufactured exports, and total exports to each of the communist countries and to the world. U.S. exports of high-technology products to communist countries constitute a relatively low (4.5 percent) share of total U.S. exports to communist countries compared with a 18.7 percent share for U.S. exports to the world. Similarly, 14.9 percent of U.S. manufactured goods exports to communist countries are high-technology items compared with a 27.4 percent to the world. Further, throughout the 1970's, the United States supplied a much smaller share of the communist countries' imports of high-technology products than it supplied to the world. For example, the 1982 U.S. shares of I.W. high-technology products exports to the Soviet Union (1.2 percent) and the P.R.C. (5.7 percent) contrast markedly with a 26.6 percent U.S. share of I.W. high-technology product exports to the world. This smaller U.S. share contrasts directly with the generally larger shares of some of the major I.W. countries—especially the F.R.G., Italy, Finland and Switzerland.

Stricter U.S. controls on exports to the U.S.S.R. (both the post-Afghanistan measures and the trade sanctions imposed as a reaction to martial law in Poland) probably played a significant role in widening the differences noted above.

TABLE 10.—U.S. HIGH-TECHNOLOGY EXPORTS TO THE COMMUNIST COUNTRIES AND TO THE WORLD, 1982

[U.S. dollars in millions]

	Total exports	Manufactured exports	High-technology exports	High-technology exports as percent of total	High-technology exports as percent of manufactured
Cuba	$1.0	$0.9	([1])	3.7	3.9
People's Republic of China	2,904.5	1,066.7	$165.3	5.7	15.5
Yugoslavia	490.0	200.4	55.3	11.3	27.6
Bulgaria	106.5	35.4	6.7	6.3	18.9
Czechoslovakia	83.6	20.5	5.7	6.8	27.7
German Democratic Republic	222.6	13.9	6.5	2.9	46.7
Hungary	67.8	58.9	13.8	20.4	23.5
Poland	292.6	65.5	8.2	2.8	12.6
Romania	223.2	51.6	20.6	9.2	39.8
U.S.S.R.	2,589.0	598.4	32.1	1.2	5.4
Total Communist countries	6,997.5	2,112.5	314.4	4.5	14.9
World	206,044.7	140,323.2	38,461.3	18.7	27.4

[1] Negligible.

Source: Department of Commerce from U.N. Series D Trade Data.

Shares of I.W. High-Technology Products Exports 2
To the Communist Countries and Rest of World, 1970-1982

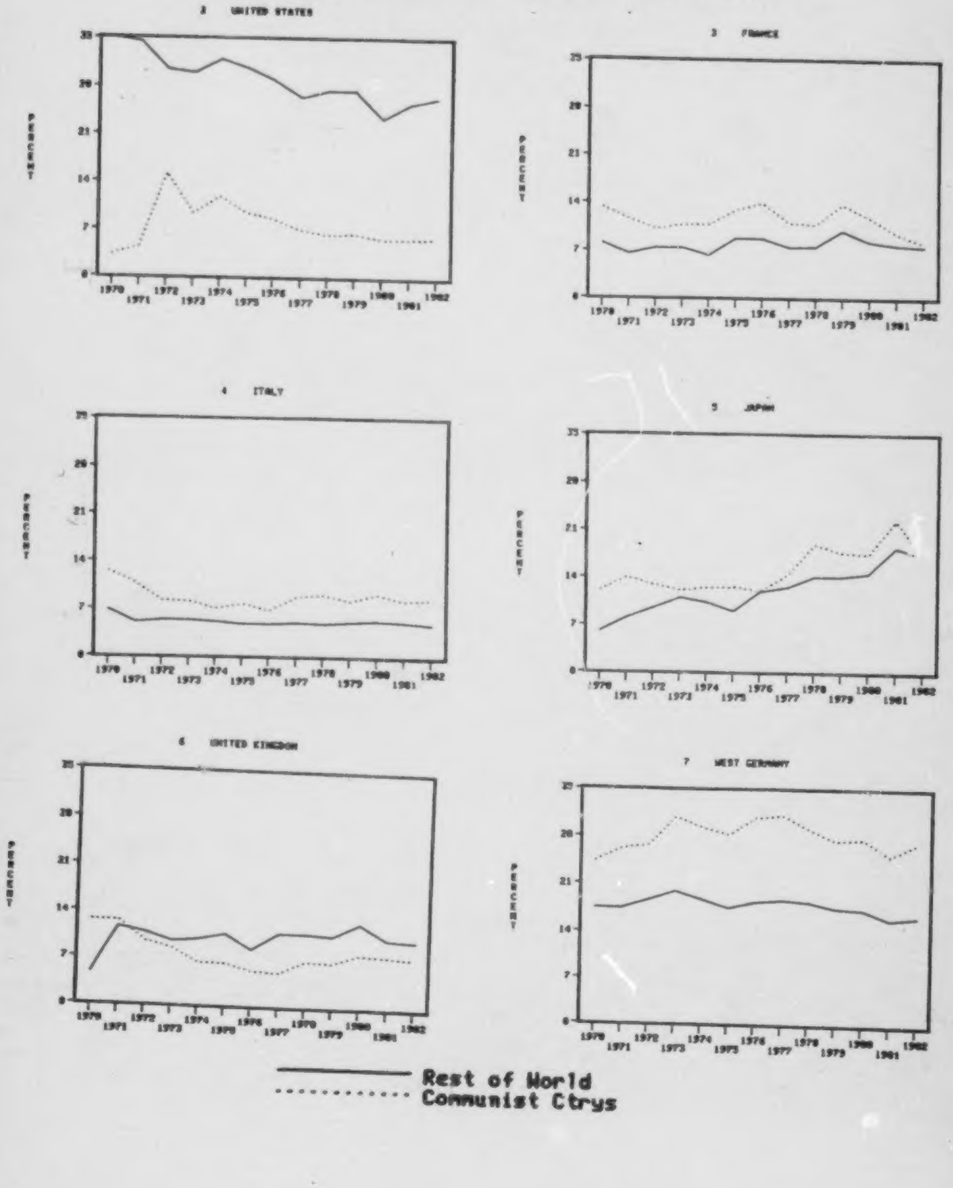
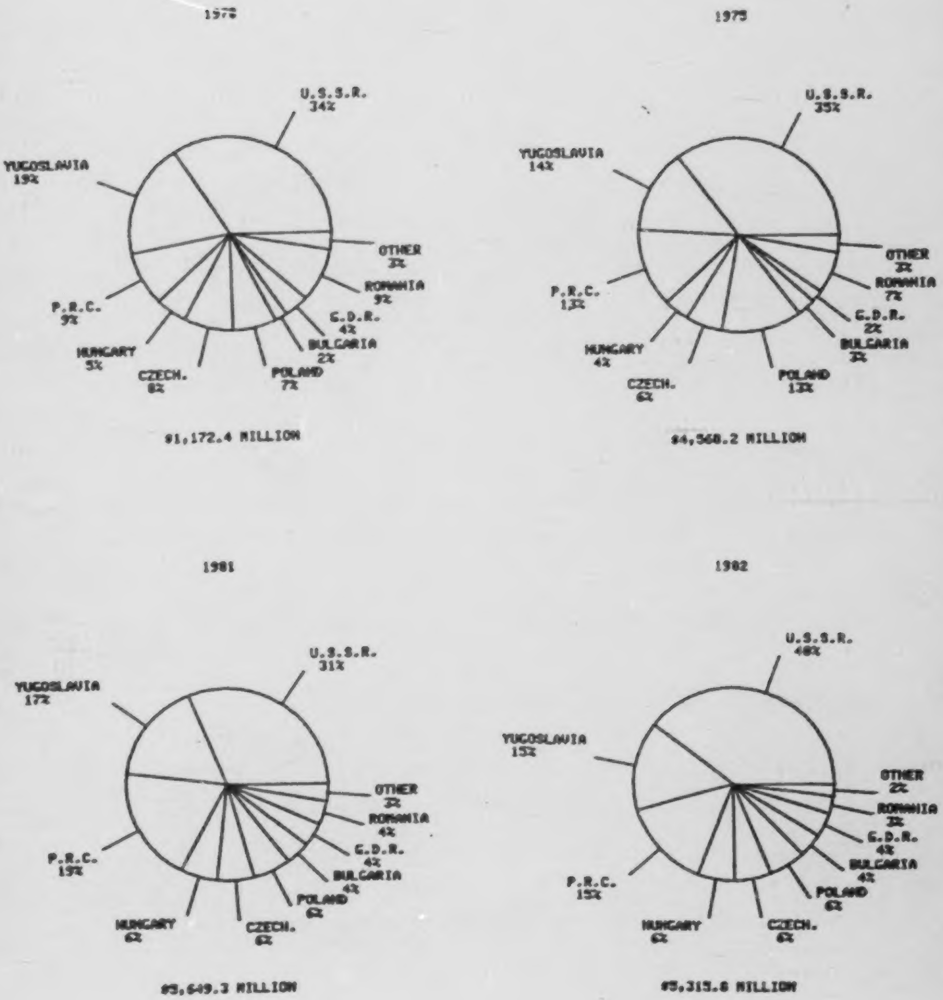


Figure 8
Destination by Country of Communist High-Technology
Imports from the Industrial West



The relatively small U.S. share of total communist purchases of Western high-technology products probably stems from a number of factors. First, the most significant communist country users of Western technology (see figure 8) have traditional trading links with the West European countries.[7] A smaller U.S. share reflects the United States' relative geographic isolation and lack of traditional participation in Eastern trade. Second, and perhaps equally important, the export control policies of the United States appear to be much stricter than the policies of the other I.W. countries. A study recently completed for the Congress of the United States concluded: [8]

> The CoCom nations' generally favorable stance regarding trade with and technology transfer to the East is reflected in the ease with which export licenses are granted. The export control systems employed by West Germany, France, Britain, and Japan all operate on the presumption that exports should be permitted in all cases except those involving items with clear and exclusive military value. A cooperative relationship between business and Government appears to exist in each of our allies' export control programs, making it possible for licenses to be granted swiftly and easily. In most cases, a time-consuming scrutiny by Government officials is not considered necessary before permission to export technology is granted.

While communist imports of I.W. high-technology products expanded vigorously throughout the 1970's, each communist country maintained a relatively constant share of these imports. Only the P.R.C. has consistently increased its share, largely reflecting its decision to abandon past policies of international economic isolation. (See figure 8.) The Soviet Union is clearly the most significant communist customer of Western high-technology products. The increase in the Soviet Union's share of total communist country high-technology product imports from the I.W. (from 32 percent in 1981 to 40 percent in 1982) probably reflects its stronger hard currency position relative to the other communist countries. The G.D.R.'s relatively small share undoubtedly stems from the West German convention of excluding the G.D.R. from its foreign trade statistics, not from actual low G.D.R. imports of Western high-technology products. (West Germany shipped almost $600 million worth of machinery, transportation equipment and instrumentation to the GDR in 1981.)

4. *High-Technology and Licensed Technology*

The data presented suggest that the volume of U.S. and I.W. exports of high-technology products to communist countries is not great and the high-technology content not unusually large. But while such aggregate data may be useful in evaluating the general economic impact of I.W. technology exports, shipments of some advanced products, though insignificant in value terms, could still make a significant contribution to advancing capabilities of potential adversaries, and thereby be a matter of Western concern.

The United States controls the exports of products and technology with potential military/industrial application. Generalizing, the export control procedure identifies products with significant potential military applications and requires that a validated license be obtained before such "controlled" products are exported to communist countries.[9] The Office of Export Administration (OEA) issues the validated license only after a detailed review insures that no significant national security risk is created by export of the product.[10] Export of all other products may be made under a general license, which does not require a case-by-case review.

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[7] The rupture in these traditional West European commercial ties resulted largely from the post World War II Soviet domination of the East European countries. This rupture has, to a large extent, healed under a decade of the Ostpolitik.

[8] "Technology and East-West Trade," (Washington: Congress of the United States, Office of Technology Assessment, November 1979), p. 201.

OEA publishes quarterly figures on the dollar value of approved export licenses to the U.S.S.R., the P.R.C., and each East European country. Many of these approved licenses are only partially used; others are never used. (There are a number of reasons for partial or no usage, e.g., the contract is given to a competitor, no contract is ever signed, only a fraction of the licensed exports are purchased, etc.).

OEA has issued estimates of the U.S. exports to East Europe, the U.S.S.R., and the P.R.C. that went out under validated license.[11] A comparison of these estimates with the value of the export licenses granted during the same period provides a rough approximation of the proportion of licenses that are actually used (about 42 percent). The annual OEA figures for approved licenses are as follows:

TABLE 11.—TOTAL VALUE OF APPROVED EXPORT LICENSES AND TOTAL U.S. EXPORTS TO COMMUNIST COUNTRIES, 1975–1979

[Million U.S. dollars]

Year	Value of approved export licenses	Total U.S. exports to Communist countries
1975	219.4	3,081.1
1976	237.4	3,629.9
1977	233.9	2,704.5
1978	457.9	4,483.0
1979	765.1	7,376.3
Total	1,913.7	21,274.8

Note.—Estimated shipments under approved licenses: 810.6. Estimated shipments under approved licenses as percent of total exports: 3.8.

Validated licenses are required for export of an important share of th[illegible]e commodities that, in addition to their military relevance, are recognized to play a leading role in general industrial state-of-the-art advancement. The OEA data suggest that the volume of high-technology exports calculated in this paper using commodity data may tend to overstate levels of U.S.—and, probably, Western—exports to communist countries of truly high-technology products, i.e., products shipped under validated license. Estimates of individual Western country shares of high-technology products trade are probably unaffected by the commodity data problems, for one can reasonably assume that the inaccuracies caused by using trade data are relatively equal for all Western countries.

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[9] Export controls may be applied for foreign policy and short supply reasons as well as protection of U.S. national security. Until recently, protection of national security has been the pertinent justification for virtually all controls applied on exports to communist countries.

[10] See footnote 1.

[11] No recent estimates are available. New estimates will be made as soon as the Office of Export Administration's License Application Review System Data Base can be accessed.

APPENDIX A

Machinery, transport equipment and instrumentation items from S.I.T.C. 7 and 86 that were not classified as high technology in this report.

Description	*SITC*
Boiler house plant	7112
Steam engines	7113
Internal combustion engines for aircraft	71141
Other internal combustion engines	7115
Gas turbines, etc. for aircraft	7116
Other engines, n.e.s	71189
Agricultural machinery & implements	712
Typewriters and checkwriting machines	7141
Duplicating, addressing, etc., machines	71491
Metalworking machinery etc. machine tools	7152
Textile and leather machinery	717
Pulp, paper and paper article machinery	7181
Bookbinding machinery	71821
Printing machinery, n.e.s	71829
Food processing machinery	7183
Construction and mining machinery, n.e.s	7184
Mineral crushing, sorting, etc., machinery	71851
Nonelectric heating and cooling equipment	7191
Mechanical handling equipment	7193
Domestic appliances, nonelectric	7194
Machine tools for wood, plastic, etc	71952
Motorized hand tools, nonelectric	71953
Other nonelectric machines (including packaging and weighing machinery, vending machines, etc.)	7196
Nonelectric machinery, n.e.s	7198
Foundry and other molds	71991
Transmission shafts, etc	71993
Nonelectric machinery parts, n.e.s	71999
Electric power machinery and switchgear	722
Machinery for distributing electricity	723
TV receivers	7241
Radio receivers	7242
Domestic electric machinery	725
Storage batteries	72912
Electric lights	7292
Automotive electrical equipment	7294
Electric supply meters	72951
Electro-mechanical handtools	7296
Railway vehicles	731
Road motor vehicles	732
Road vehicles, nonmotor	733
Airships and balloons	73491
Ships and boats exc. warships	7353
Ships, etc., for breaking up	7358
Floating structures exc. vessels	73593
Eyeglasses and frames	8612
Movie and sound equipment	8615
Photographic equipment, n.e.s	86169
Medical instruments, n.e.s	8617
Nonelectric meters and counters	8618
Photographic chemicals in measured portions	8623
Developed movie film	863

In addition, the items described in Appendix B were omitted from our high-technology list, although with a lesser degree of certainty.

APPENDIX B

Items that some of the OEA specialists suggested might contain important high-technology products, but that we chose to omit from our list.

SITC	Description	Remarks
7111	Steam-generating boilers	Might include nuclear plant types, but these are highly developed in U.S.S.R. as well.
71181	Water turbines	Hydroelectric turbine technology is also very advanced in the U.S.S.R.
71822	Type-making and typesetting machinery	Advanced models have built-in computers.
71994	Metal-plastic joints (gaskets)	One model (viton is made of high-technology plastic material).
8614	Photographic cameras	High-speed cameras might be considered high technology.
8641	Watches	Some are high-technology consumer products.
8642	Clocks	Perhaps some are high technology.

POLITICAL ECONOMY OF EAST-WEST-SOUTH INDUSTRIAL COOPERATION

By Gerard Ballot and Patrick Gutman *

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* Gerard Ballot, Universite de Picardie, Amiens (France); Patrick Gutman, Universite de Paris—I (Pantheon-Sorbonne). This paper is a synthesis of the principal results of a research program on the *Political Economy of East-West-South Industrial Cooperation* [in French] undertaken at the end of 1981. It is also the logical sequel to a first contribution presented in the works submitted to the J.E.C. (See Patrick Gutman, "Tripartite Industrial Cooperation and East Europe." pp. 823-871 in John P. Hardt (ed.), *East European Economic Assessment, Part 2—Regional Aspects*, Joint Economic Committee, Congress of the United States, 97th Congress, 1st Session, July 10, 1981, USGPO, Washington, D.C., 886 pages).

This work is also based on two previous documents:

Gerard Ballot and Patrick Gutman, *Economie Politique de la Cooperation Industrielle Tripartite Est-Ouest Sud, Analyse Geopolitique*, a paper presented to the conference "The new directions of development: what is Europe doing? organized jointly by the European Association of Development Research and Training Institutes and the World Economics Institute of the Academy of Sciences of Hungary in Budapest, November 11-14, 1981.

Gerard Ballot and Patrick Gutman, *Analyse des Structures de Taches des Poles Est, Ouest, Sud dans la Cooperation Industrielle Tripartite*, paper presented to the conference "The Development of East-West Trade in the Difficult Conditions of the World Economy," organized by the Franco-Austrian Center for meetings between European countries with different economic and social systems in Vienna, May 30 and 31, 1983.

Deanna Hammond, head of the Language Services Section, Congressional Research Service, is responsible for transplanting this article into English.

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SUMMARY

The purpose of the paper is to provide insights through quantitative analysis of East-West-South Tripartite Industrial Cooperation (TIC). Why this form of TIC? There is general agreement on the economic motivation of Western participation; Western firms seek Eastern partners to lower the supply prices of industrial complexes. The rationale for the Eastern motivation is less obvious. Why, in a number of cases, does the East use TIC, rather than East-South cooperation? The data gathered by the authors provide a clear and positive answer to this question. It is tentatively the following: The West brings the know-how that the East does not possess. The East may use the know-how for its own purpose. This reason has potential political and economic consequences for the West. Moreover, TIC has a broader geopolitical perspective, as well as an economic and technological dimension. This paper shows that the East uses TIC as a means to make inroads into LDCs under Western influence and that the reverse is generally not true.

The consequence of the two points mentioned above—geopolitical as well as technological—means that there is a conflict in the West between the business interests of private firms and the strategic interests of Western nations in TIC. Such a trade-off may require public recognition and debate. This paper summarizes a fairly rich set of new data (255 TIC cases) which may be used to facilitate such a debate.

The geopolitical analysis is presented in Part I. The tool of factorial correspondence analysis has been used to build a political-economic chart of TIC. Two main results are apparent. First, Western lead countries do not introduce the Soviet Union into Africa. Rather, CMEA members (including USSR) actively initiate TIC operations there. Second, there exists a set of Southern countries characterized by either political instability or their move out of the Western camp. The cases involving these countries happen to have been initiated by the West, but the East, whether or not it is the initiator, reaps a geopolitical gain.

The technological argument is presented next in Part II through the examination of the partners' work structures (engineering, subcontracting of equipment, assembly and civil engineering). These tasks are classified on the basis of the criterion of the technological level, and the partners can therefore, be ranked (under certain conditions) accordingly. The West is definitely first in the hierarchy, the East second, and the South last. The study shows that the East and West are complementary, the West doing more engineering and the East more subcontracting of equipment.

The study of the dynamics of TIC furthermore reveals an interesting evolution from the 1958–1975 period to the 1975–1981 period. If the Western work structure is stable, both Eastern and Southern structures deteriorate. The data give rise to a preliminary interpretation: as a leader, the East leaves the South less work to do because the East increases its involvement in assembly. It, therefore, competes with the South. On the other hand, the West as a leader enables the South to be more active than before, but the latter's tasks are reduced to mere assembly.

The East thus benefits more than the West from a technological transfer through TIC, and the East more than the South through diminishing Southern role in TIC participation, although the latter benefits from the supply of industrial equipment.

I. INTRODUCTION: THE NEED FOR A TIC POLITICAL-ECONOMIC ASSESSMENT

Although the development of Tripartite Industrial Cooperation (TIC) is relatively recent and only became significant at the beginning of the Seventies,[1] it seems essential to analyze it because it is, in fact an important mechanism in the qualitative development of East-West economic relations. Through TIC the countries of the East have become partners in the building of industrial complexes in developing countries, with the more or less important participation of Southern firms. Generally speaking for the partners, it means constructing turnkey realizations after the invitations for international bidding have been issued by the Third World countries.[2]

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[1] Some cases were carried out in the 1960s. However, it is clear that TIC was only able to develop after the presence of certain necessary conditions, which are: a) the normalization of international relations through detente; b) an East-West standardization of technology fostered by the common work experience that industrial cooperation has developed.

The participation of socialist Foreign Trade Organizations (FTOs) in the Western bidding on developing country contracts, actually makes it possible to lower the total cost of the projects. It is an especially creative practice on the part of the Western industrial countries to look to the East for the support necessary for answering invitations for international bidding. TIC thus constitutes a particularly effective international industrial marketing tactic in a context of more and more severe inter-Western competition. At the same time, it indicates the desire of countries of the East to play an increased role in the "international division of labor" by whatever means available.[3]

The effectiveness of the mechanism has become so well known and appreciated by the partners of the East and West that a growing number of cases have been recorded: 177 between 1976 and 1981 (6 years), as opposed to 138 between 1965 and 1975 (11 years), or a total of 255 cases divided among 53 different host countries.[4] At the same time, great progress has occurred with the number of protocols signed by the Western firms and the socialist FTOs for cooperation in third countries: 118 between 1976 and 1981, as compared with only 37 for the 1965–1975 period.[5]

It thus appears that TIC, unlike during its early days when it functioned as the result of chance in international awards, is becoming a permanent mechanism of strategy for Western firms and the Eastern foreign trade organizations. Even the establishment of joint East-West companies—pooling industrial and banking capital [6]—can be seen as undertaken for the explicit purpose of completing industrial complexes in the Third World.[7]

It is clear that the rationality of TIC revolves around the setting of a supply price for industrial complexes. In doing so, it gives Western turnkey operators and engineering firms an extra chance to surmount the difficulties of inter-Western competition, but the central problem is in recognizing if there are any conflicts between the microeconomic interests of companies and the strategic interests of the Nation-States.

The Western approach to TIC is primarily microeconomic and is thus limited; it is seen as a simple international industrial marketing tactic. The FTOs, on the other hand, take account of macro (strategic and economic) effects for their involvement in TIC.

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[2] Unlike the United Nations Economic Commission for Europe, for the purposes of this study, the host country is necessarily a Third World country; in no case is it another country of the West or East because that would be simple East-West cooperation in third markets and not tripartite cooperation.

[3] Cf. P. Gutman, "Tripartite Industrial Cooperation and East Europe," op. cit., pp. 842–844, in particular.

[4] The list can be found in Annex I.

[5] A list of protocols signed between 1976 and 1979 can be found in P. Gutman, "Tripartite Industrial Cooperation and Third Countries," pp. 362–364, in C. T. Saunders (ed.), "East-West-South Economic Interactions between Three Worlds," London, MacMillan, 1981, 382 pages.

[6] Highly important development of the internationalization of the engineering function, which appears in TIC with a slight delay.

[7] Their number is for the moment limited and does not in all likelihood exceed a dozen. A list of the principal ones among them will be found in Michel Goffin, "East-West Collaboration on Third World Projects," Worldwide Projects, August/September 1980, p. 18.

The CMEA, with only the potentiality of proposing lower costs, should logically turn to East-South Industrial Cooperation. As this is not always the case, it is essential to go beyond the strictly commercial approach and search for explanations of a geopolitical and/or technological nature. In the East, a growing number of favorable reactions to TIC are being recorded after a relative silence, corresponding to the will to test the potential gains to be drawn from it.[8] This recognition of TIC implies that its logic is being reexamined from an East European point of view.

It is understandable that the Western exporters of industrial equipment do not usually ask the larger political and economic questions.[9] They prefer not to question the mechanism that provides them with new orders, especially in a period of slowdown. With respect to Western governments, they are, in view of high unemployment, often encouraged to favor exports, even at the expense of strategic interests.[10] TIC is, therefore, a central issue yet to be raised by those in charge of defining the policies of technology transfer related to West-East technology transfer. TIC seems to have been rarely taken into account, since the East is not the final destination for the transfers of Western technology. TIC allows the East to find markets for its capital goods in the Third World, with the West contributing the technologies that CMEA does not have.[11]

One may thus ask whether TIC allows the East to increase its own expertise in the process of completing industrial complexes under contact with Western turnkey operators. Such a learning effect—which is not a direct technology transfer but rather the assimilation of know-how—could prove to be doubly beneficial for the East: both for East-South Industrial Cooperation and for the internal dynamics of CMEA. If this is, in fact, the case, TIC is not a simple West-South technology transfer with conventional subcontracting from the East—directed toward expanding capital goods exports to the South—but an active strategy of assimilation for the Eastern economies through the exercise of technology transfer.[12]

In the framework of a geopolitical analysis, TIC is for the East and West a means of extending their sphere of influence in the Third World. Technological gains thus may also become geopolitical gains. The Eastern strategies for TIC are twofold:

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[8] This attitude is not surprising since the logic of decision-making in the East is understood: with every change or introduction of a new mechanism, some delay is necessary in order to test its advantages or drawbacks. In this case, it is the CMEA countries of second rank that have served as test balloons, while the USSR cautiously stays away. Cf. P. Gutman, "Tripartite Industrial Cooperation and East Europe," op. cit., pp. 831-836.

[9] They feel even less inclined to do so because the objective of TIC is the completion of industrial complexes in the Third World and not in countries of the East, even if the latter are in the project. In reasoning—and above all in doing so they obscure the technological impact of the co-exportation of turnkey plants with the socialist FTOs. It is clear that this does not figure highly in their concerns.

[10] The matter of the gas pipeline in 1982 highlighted the force of this argument illustrating how exports towards the East are used as regulators in time of crisis.

[11] And this is true no matter which country acts as the leading partner/lead country of the operation.

[12] It may be noted that the process of acquisition of know-how by the East is different in East-West Industrial Cooperation (EWIC) and TIC. Whereas the acquisition of know-how is passive in EWIC it becomes active in TIC through the installation of industrial complexes and the opening of the technological package. Therefore, delicate problems of assimilation, which persist in EWIC, might be more easily resolved through the practice of TIC.

Either to maximize gains through an offensive strategy aimed at penetrating the politically opposing sphere of influence;

Or to minimize losses through a defensive strategy aimed at preserving the advantages acquired in a particular region.

The uniqueness of TIC comes precisely from the fact that the two-pronged strategy is carried out with the support of the political rival, who becomes a partner through the international split of tasks. It is thus important to determine who, West or East, is improving its political and economic relative position through the mechanism of TIC.

Using a data bank comprised of 255 TIC cases divided among 53 different host countries in the period 1958–1981, this study, through systematic quantitative analysis, evaluates TIC at two levels: (1) the broad geopolitical analysis and (2) the detailed examination of the working relationship of the partners. For the first time in TIC analysis, a distinction has been introduced between "leading" and "principal" partner (main subcontractor)—the leading partner [13] by nature having a greater degree of freedom in its strategy than does its principal partner—which substantially helps to illustrate the mechanics of TIC.

In the first part dealing with the geopolitical analysis of TIC an assessment is made of the strategies of the East-West pairs in relation to the Third World countries in which they intervene. A political-economic chart of TIC is presented with the assistance of data analysis techniques.

In the second part, a detailed economic analysis of TIC, the statistics of the work structures of the participating countries are examined on the principle that every industrial project can be broken down into distinct tasks and ranked according to the degree of skills (engineering, subcontracting of equipment, assembly and/or civil engineering) (Section 1). The differentiation of work performed by the East, West, and South makes it possible to study the competition and complementarity of the partners, both statically (Section 2), and dynamically (Section 3).

Consisting of a combination of tasks, TIC necessarily reflects the respective position of the East, West, and South in the technological hierarchy, a position that is not necessarily the same as in East-West, East-South, or West-South bilateral relations. TIC thus lends itself to the particular study of relative specializations.

II. THE GEOPOLITICAL ANALYSIS: A SYNTHETIC CHART

For the geopolitical analysis, a political-economic chart of TIC has been constructed, based on the participation of different countries. In the chart, a distinction has also been drawn between the leading and principal partners, taking into account the sectors for whom the projects were undertaken.[14]

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[13] The World Bank and other international institutions use the term "lead country" for "lead partner" which has the same meaning.

[14] The coding and the computerization of the information is summarized in Annex II; the choice of variables and modalities used for the geopolitical examination—which is based on the technique of data analysis—is presented in Annex III.

Continued

A. Factors for a Typology (Cf. Figure 1)

1. FIRST FACTOR: INITIATIVE IN TIC (TO BE READ ON THE ABSCISSA)

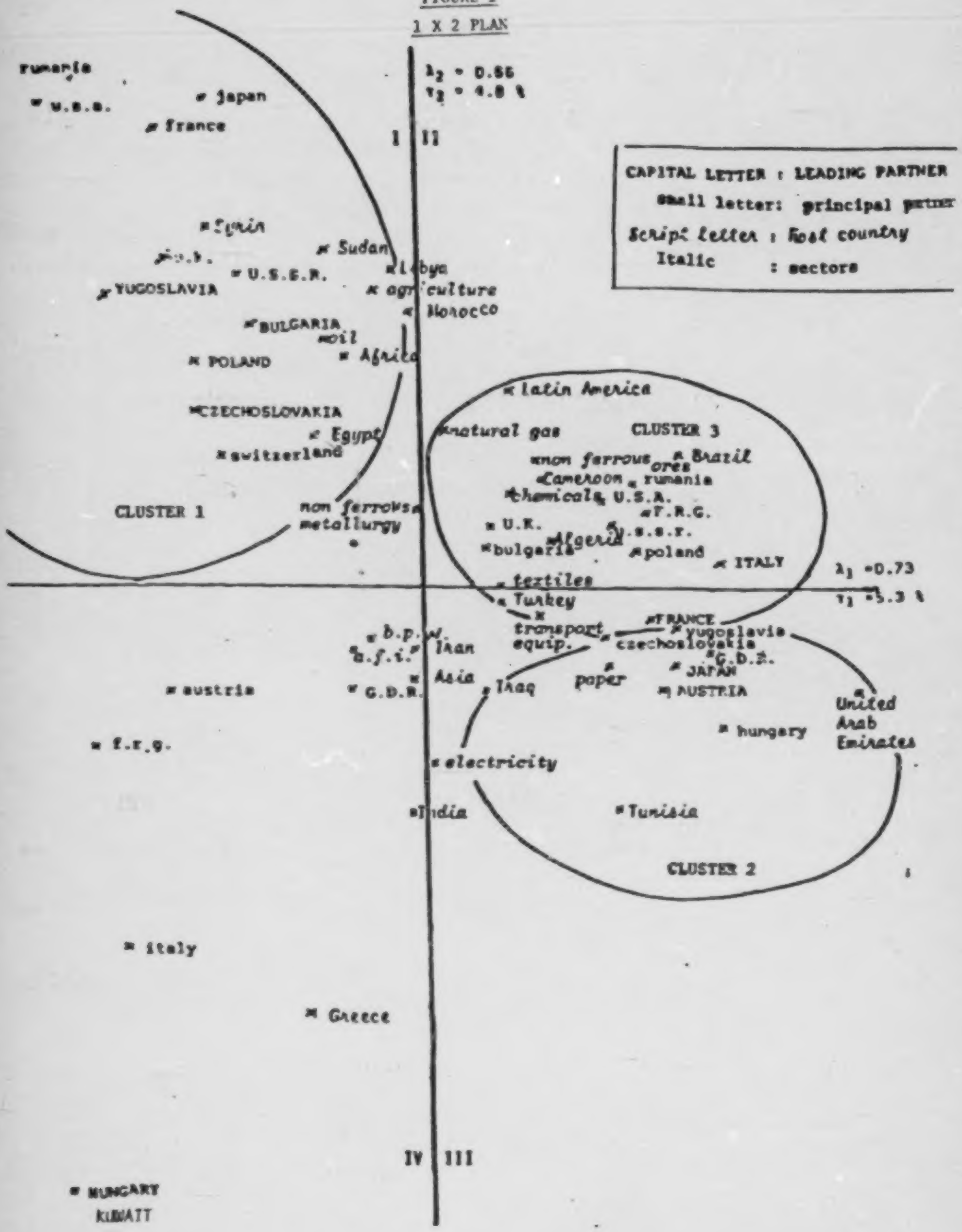
This factor has an extremely clear interpretation. The East European leading partners (Hungary, Yugoslavia, Romania) have a negative abscissa and some of them make an important contribution to the eigen value.[15] The same could be said of the West European principal partners (PPs) (i.e., France, Italy, FRG, Great Britain). By contrast, the West European leading partners and East European principal partners have a positive abscissa.

Detailed information, such as that on the division of work and the dates of the signing of contracts, has not been taken into account; we have only used the information related to the sectors under the form of supplementary variables. (These are projected on the chart, but not used to draw it.)

[15] Definition: Characteristic root.

FIGURE 1

1 X 2 PLAN



The first factor axis thus expresses the initiative in the area of tripartite cooperation.

It should be noted that the United States (principal partner) and the USSR (lead partner) make a weak absolute contribution to the determination of the axis.[16] Their marginal role in TIC is thereby confirmed. (Their absolute contributions to the latter axes are also weak).

2. SECOND FACTOR: HOST COUNTRY PREFERENCE FOR ONE CAMP (TO BE READ ON THE ORDINATE)

This factor contrasts the African host countries (Africa to the south of the Sahara altogether) and Libya with Kuwait and Greece. This opposition is not only geographical but political as well. Kuwait, Greece or Tunisia can be classified as pro-West, while Libya and an important part of the African host countries (Angola, Congo, Ethiopia, Guinea, Madagascar, Tanzania, Zambia) are pro-Soviet or practice a neutrality unfavorable to Western interests.

The second factor axis thus reflects the preference of the host country for one of the camps.

Although additional factors have been considered, only the first two factors form the basis of this study. The analysis presented is therefore exclusively of the 1 × 2 plan.

B. A Typology of East-West Pairs Involvement

Three clusters that are well characterized and that contain numerous cases are distinguishable. Those remaining are found in Quadrant IV where the density is low. Strictly speaking, this group could form a fourth cluster of small size, corresponding to the pairs Hungary-Italy, but whose geopolitical interest is minor.

1. THE EASTERN INITIATIVE IN AFRICA (FIRST CLUSTER, QUADRANT I)

This cluster includes 70 cases and shows three specific characteristics:

All the leading partners are countries of the East; in addition, they are all represented there except for Hungary and the GDR (supplementary variable);

The principal partners are France, Great Britain, Switzerland, the United States and Japan; missing are the FRG, Austria and Italy;

The host countries are African in the geographical sense of the term (and thus include Morocco, Algeria, Libya and Egypt). However, some cases involving Syria and Pakistan are included.

One can interpret the absence of Hungary and the GDR on the basis of the degree of adaptation to the relatively high world demand for the former and by the advanced technology of the latter, permitting them to cooperate with other partners and/or in other host countries.

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[16] The United States (lead country) and the USSR (principal partner) are not mentioned, since it has been necessary to give them the status of supplementary modalities due to their small number of cases of participation (cf. Table III.1 of Annex III).

The most notable fact is, however, the following: the countries of the East are leading partners in many of the cases involving Africa (in the geographical sense). This undoubtedly is a result, in part, of the unwillingness of the Western countries—in particular, the former colonial powers—to bring the countries of the East into Africa as principal partners.[17]

The political ties of Western countries are strong enough for the competition not to constrain them in the initiation of TIC: their penetration in Africa is principally through the bilateral West-South framework. This explains why the Eastern countries as principal partners are located far from the African host countries.

How can one then explain the great number of cases where the East is the leading partner? The cluster of observations (i.e., the 255 TIC cases projected on the 1 × 2 plan but not reproduced on Figure 1), as well as the cluster of variables, shows clearly that on the part of the countries of the East there is a search for economic presence in Africa. The supplementary variable, sector, contributes to explaining this desire for penetration: the modality "petroleum" is fully projected to the interior of the cluster of variables, while the other sectors—except for agriculture, which involves few cases—are more or less distant from it.

2. SECOND RANK EUROPEAN PAIRS IN PRO-WEST SOUTH (SECOND CLUSTER, QUADRANT III)

This second cluster involves about 50 cases and can also be described in detail. First, the lead countries are the FRG, France, Italy, and Austria, i.e., Europeans. Second, the principal partners are Yugoslavia, Hungary, Poland and Czechoslovakia. The USSR is absent and the GDR, Romania and Bulgaria are barely present.

Third, the dominant host country is Iraq. Also in the cluster are Greece, Tunisia and countries of the Near and Middle East: Turkey, Lebanon, Jordan, the United Arab Emirates. Finally, one finds countries belonging to the Asian region, e.g., India, Bangladesh, Indonesia. It should be noted that all of these host countries are pro-West.[18]

The exclusion of the USSR can be explained by the desire on the part of the Europeans not to bring the Soviets into two zones vital to them—the Mediterranean (Tunisia, Greece, Turkey, Lebanon), which is the southern flank of NATO, and the Middle East, which supplies them with petroleum.

The use of principal partners, such as Poland and Yugoslavia, on the other hand, can be explained by economic reasons. The foreign trade organizations of these two countries in particular propose low prices for civil engineering and assembly, thus permitting the West European lead countries to lessen the American competition through the calls for international bidding: there is no case of American leading partners in this cluster.[19]

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[17] Observation confirmed by the cross tabulations available upon request from the authors as Annex IV.

[18] This is obviously in accord with the interpretation of the second factor axis. The host countries have a negative ordinate.

[19] Research on the division of labor in some of the cases belonging to cluster 2 has made it possible to verify this economic interpretation.

3. INTER-WEST COMPETITION AND SOUTHERN INSTABILITY (THIRD CLUSTER) (QUADRANT II AND UPPER PART OF QUADRANT III)

The third cluster includes about 38 cases. At the level of the lead country the total absence of countries of the East can be seen. Instead, the lead countries are the United States, Great Britain and at the edge of the cluster, France (projections of variables). The FRG, Italy and Austria are also found there. The difference then between the second cluster and the third cluster is the presence of the United States and Great Britain.

The principal partners are the USSR and Poland, as well as Bulgaria and Romania. Hungary is barely present. The partners of the East are thus partially different from those that were found in cluster 2; the notable fact is evidently the presence of the USSR.

At the level of host countries, a larger geographical dispersion can be seen than in other clusters. One can find the projection of the Latin American variable and of cases (not shown) in which numerous countries belonging to this continent (Brazil, Argentina, Chile, Ecuador, Uruguay, Bolivia, Cuba) participated, as well as cases involving countries of Asia (Ceylon, Afghanistan), as well as countries of Africa (Senegal, Togo, Gabon, Cameroon, Guinea, Mauritania), countries to the North of the Sahara (Morocco, Algeria, Libya, Egypt) and finally Syria and Iran.

The examination of this list makes it possible to suggest the existence of a characteristic common to a large number of the countries: instability.

It may be a matter of simple instability of a domestic nature (Morocco, Turkey, Bolivia, Argentina). But there are also countries in this group which over the last few years have changed sides in the East-West sense, for example, Egypt (1970s); and above all, in the West-East sense, Guinea and Congo (1960s) and more recently Iran (1978—not pro-Soviet but rather anti-West), Afghanistan (1979) and Libya (military accords with the Soviet Union, 1981).

In addition, many of these countries have abundant raw materials (Gabon) and are new petroleum producers (Ecuador, Cameroon) not to mention large producers (Algeria, Libya, Iran). The projections of the supplementary sectoral modalities also involve nonferrous minerals and natural gas (in addition to chemistry and textiles).

The interpretation that can be drawn from the study of this cluster is that the firms of some Western countries have brought countries of the East, notably the USSR, into either unstable countries or those which have recently changed sides. However a relationship of cause and effect cannot be substantiated. Nevertheless, the presence in this cluster of countries (e.g., Cameroon, Ecuador, Gabon) whose strategic importance is greatly increasing for the West which lack raw materials, reveals in any case the contradictions between the microeconomic interests of the industrial export firms—whose goal is the maximization of the added value—and the geopolitical interests of the Nation-States to which they belong. The logic of the inter-capitalist competition, which forms the microeconomic rationality of TIC, is not foreign to such a result.

In conclusion, it is important to point out that the basic findings of Part I confirm earlier research done by the authors on TIC: TIC is essentially an intra-European phenomenon in which the United States and the USSR play a weak role. The USA and USSR up to now have never worked together, but rather have only worked with a second rank (European) partner of the opposite block.

In addition, the distinction made here between leading partner and principal partner makes two very essential points:

First, the countries of the West do not bring the USSR into Africa—in the geographical sense—but the countries of the East enter there in great numbers as leading partners. The analysis of correspondences, as well as cross tabulations, clearly shows this. (See footnote 17.)

Second, the instability or the changing of spheres of influence (from the West toward the East) of some countries where the West participates as leading partner and the East as principal partner is verified.

One can thus wonder whether TIC for the USSR is a supplementary mechanism of destabilization of pro-West Southern countries much more through the interposition of Eastern countries than through direct Soviet intervention.

Moreover, through TIC the second-rank countries of the East find a supplementary access to raw materials from the Third World (petroleum and minerals notably), as well as outlets for their exports outside of the CMEA. In addition, they weave technological ties with the West through TIC, which offers them the possibility of a slight margin of autonomy with respect to the USSR.

TIC is a dual phenomenon. If it contributes, in the first place, to destabilizing the pro-West South to the benefit of the East, it is possible that it also exercises a boomerang effect on the USSR, as a result of this margin of autonomy accorded.

III. THE ECONOMIC ANALYSIS: WORK STRUCTURES AND APPRENTICESHIP EFFECT

A. An Analysis in Terms of Work Structures

1. THE NOTION OF WORK STRUCTURES

On the basis of the microeconomic information on the tasks[20] carried out by the partners in a given case, it was possible to perform an analysis of the division of labor. A work structure based on elementary tasks[21] was calculated for each country. This structure consists of four figures that specify the ratios of the following tasks carried out by the country out of its total of tasks: engineering, equipment, assembly and/or civil engineering and "none." The task "unknown" is excluded from the calculation.

---

[20] The terms "work," "task," "function" will be used interchangeably to designate the contribution made by the three partners in TIC.

[21] Note that one country may do more than one elementary task. The total of the elementary tasks carried out by a country does not, therefore, normally coincide with the total of its cases of participation in TIC.

For each case (country or pole), a total is made of the elementary tasks, engineering, equipment, assembly and/or civil engineering and from that are obtained the four corresponding percentages through simple division. This work can naturally be done for different subsets of the file in order to obtain structures by poles or countries according to the sector, the host region, the period, etc.

2. HOW TO RANK PARTICIPANTS' WORK STRUCTURES

In Sections B and C, the work structures of the different participating parties will be compared through three sets of numbers (% of engineering, % of equipment, % of assembly and/or civil engineering). However, if such a multivariable comparison contains a great deal of differing information, it is not possible to settle on ~~one~~ ranking number. A method has been used that permits such a ranking. This ranking is based on the criterion of the relative place in the hierarchy of the participants' work structures. Assigning a precise statistical content to this criterion is difficult because of the problem of comparison when there are multiple criteria but a ranking between the countries is possible through a multi-criteria analysis method, Electre II.[22] A simple rule, derived from this method and valid when few participants are involved, is used here.[23]

B. Static Analysis of the Work Structures

1. COMPLEMENTARITY AND/OR COMPETITION OF THE THREE POLES

The examination of the work structure of the three poles in TIC, without distinction as to the role played by the East and West (leading partner/principal partner), reveals an apparent complementarity between the West, East and South.

TABLE 1.—WORK STRUCTURE BY POLE

Poles	Engineering	Equipment	Assembly/civ eng.	None	Total
West	45.2	51.2	3.6	0	100
East	25.5	59.8	14.7	0	100
South	2	10.5	82.9	4.6	100

The comparison of the work structures clearly reflects the different levels of development of the actors present:

The West, the most industrialized pole, has a much higher level work structure than do the other poles;

The East, an industrialized pole, but less advanced in the technological areas, has an intermediate work structure between those of the West and the South. It participates as a supplier of equipment (close to 60%), while contributing a non-negligible part of the engineering and assembly/civil engineering;

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[22] Cf. G. Ballot and P. Gutman, "Economie Politique de la Cooperation Industrielle Tripartite Est-Ouest-Sud. Analyse de la hierarchie des structures de taches," note mimeo, 1982, pp. 5–10, and Annex I, pp. 46–51.

[23] This rule is the following: For country A to be at least as high in the hierarchy as country B, it is necessary and sufficient that three conditions be fulfilled simultaneously: The percent of engineering of A must be at least equal to that of B; the percent of "engineering + equipment" of A must be at least equal to that of B; and the combined percent of "engineering + equipment + assembly and/or civil engineering" of A must be at least equal to that of B.

In figure 2, it is easy to carry out the three comparisons: in fact, a cumulative percentage is measured graphically by the sum of the lengths of the different rectangles that form it (each rectangle corresponding to a task), a sum that is calculated from the highest ranking task towards the lowest.

The justification for the algorithm retained rests on the following idea: a participating party can replace a lower level task with a higher level one without descending in the ranking, but not the opposite. Thus, in figure 2, part 2b, the West provides 49.2 percent of the equipment (second-level task), as compared to 71 percent for the East, but 47.3 percent of the engineering (first level task) compared to 13 percent for the East: it thus, does more of the highest level task but also more of the cumulative total of the two highest levels tasks. However, it should be noted that the algorithm does not totally reject the possibility of incomparability.

The South, the underdeveloped pole, notably in the industrial area, the only one of the three that sometimes does not participate[24] ("none" function), is characterized by a work structure where the lowest-level function, the assembly and/or civil engineering, predominates.

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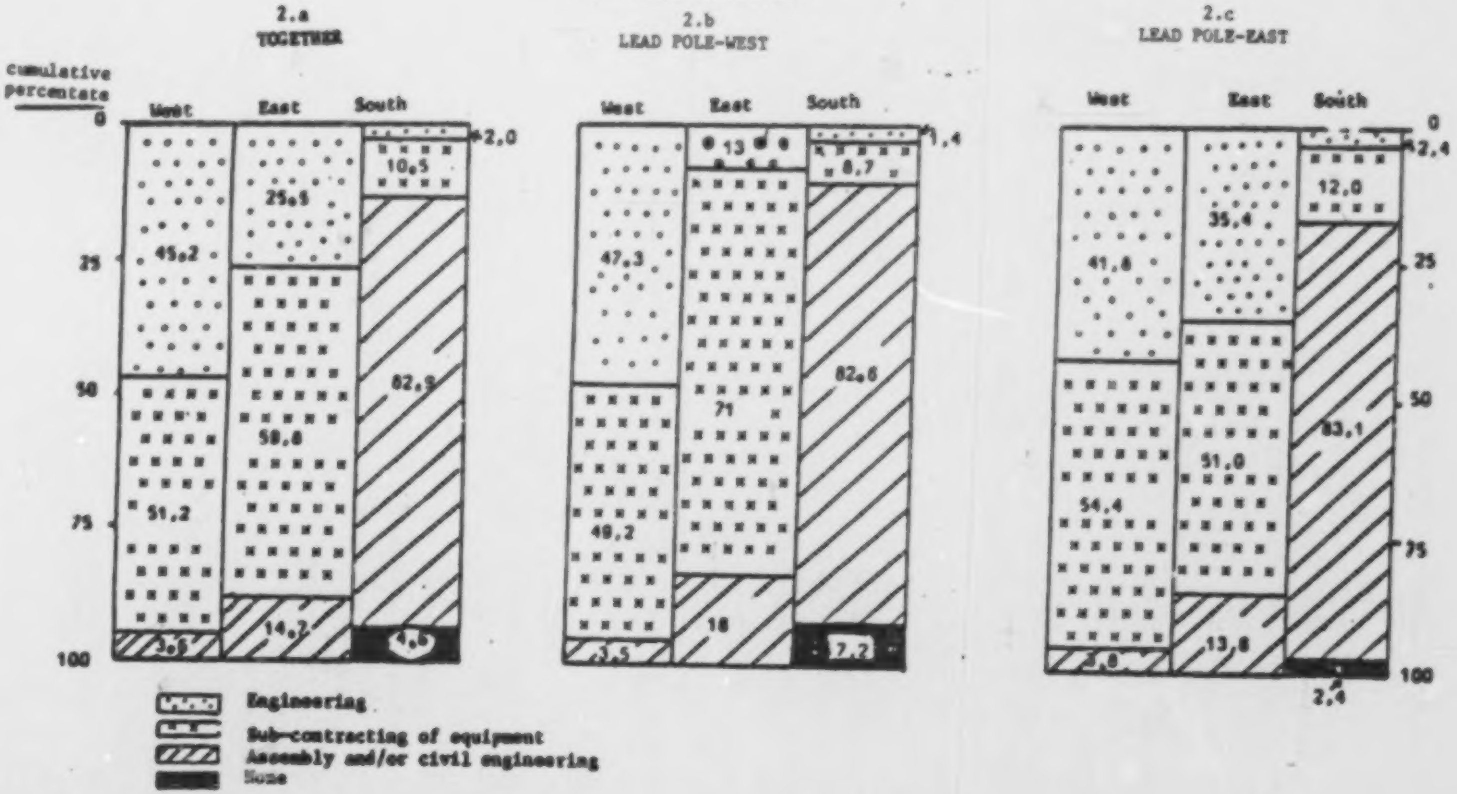
[24] By definition, the East and West are necessarily active because otherwise there would be no tripartite cooperation (or East-West cooperation in third countries).

FIGURE 2

WORK STRUCTURE BY POLE



2.a TOGETHER

2.b LEAD POLE-WEST

2.c LEAD POLE-EAST

The distinction leading partner/principal partner, in the case of the West and East, contributes supplementary details. Figure 2, which presents the work structures of the West, East and South poles in two cases, one in which the West acts as the leading partner and the other in which the East acts as the leading partner, illustrates an important point: the West, whatever its status, is characterized by a quasi-stable work structure, while the East registers important differences in its work structure, according to whether it is the lead country or the principal partner. The most important difference in this regard is the relative weight of engineering, which differs quite noticeably: 35.4% as lead country, as opposed to 13% as principal partner (The corollary is provided by the variation in equipment which develops in an inverse manner).

These perceptible modifications in the work structures of the East barely affect the work structure of the South. It is possible to note a work structure that is slightly higher for the South with the East as leading partner as compared to the West in that role. The explanation lies mainly in the fact that the South appears to be a little more active with the East than with the West.

Beyond these first observations, it is necessary to evaluate whether this apparent complementarity—on a global level—is the result of real cooperation or, on the contrary, is the result of competition between the partners. In particular, an effort will be made to determine whether the task carried out by the South affects the East-West complementarity.

2. ANALYSIS OF EAST-WEST COMPLEMENTARITY ACCORDING TO THE TASK DONE BY THE SOUTH

The examination of the various subsets corresponding to a split of the file according to tasks carried out by the South—assembly, equipment and assembly, none, all tasks, all actual tasks (Actual tasks are all the tasks excluding the task "none") provides a supplementary insight: it is possible to specify the relative changes that enter into the complementarity of the work structures of the East and West according to what the Southern host does (cf. Table 2). It is whenever the South does nothing that the West is the most active in the engineering function. In addition, it is at this time—and only then—that the West surpasses the East in the area of equipment. Finally, it is on this occasion that the part related to the assembly/civil engineering is of the highest level for the East, reaching 50% of its contributions (while the least for the West). It is thus clear, and, therefore, logical that the absence of participation by the South induces greater East-West complementarity.[25] However, it is necessary to be rather prudent with respect to conclusions drawn from these observations to the extent that they have a bearing on only a small number of cases (seven). Nevertheless, the absence of participation by the South is explained quite well in the seven cases recorded: It is a result of a particularly high technological level in the turnkey plants considered.

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[25] This is underlined perfectly by the differentials by task (differences between the East and West for the same function): there are 37.5 points for engineering and 12.5 points for equipment in favor of the West.

Whenever the South participates, the work structure of the East improves because the assembly tasks are then left to the South. This improvement in the East's work structures, however, comes about to the detriment of the West. In this case, the engineering component of the West's work structure is the lowest and the equipment component for the East's work structure is the highest.

On the other hand, if the South is primarily responsible for both the equipment and the assembly functions, it actually raises the level of the West's work structure, for the West carries out more engineering. The work structure of the West is then higher than when the South only carries out assembly/civil engineering (47.6% compared to 42.2%). Similarly, the East carries out more engineering (42.3%) when the South carries out more equipment and assembly tasks than when the South does only the assembly (29.7%) or does not participate (12.5%).

Table 2

EAST-WEST WORK STRUCTURES ACCORDING TO THE TASK DONE BY THE SOUTHERN HOST

MODE OF CALCULATON		SOUTH AS LEAD COUNTRY EXCLUDED - ON THE BASIS OF COUNTRIES						ON THE BASIS OF POLES SOUTHERN LDCs EXCLUDED	SOUTHERN LDCs INCLUDED
NUMBER OF CASES	?	109	15	127	7	110	244	244	255
TASK OF THE SOUTH		ASSEMBLY	EQUIPMENT + ASSEMBLY	ALL ACTUAL TASKS	NONE	UNKNOWN	ALL TASKS	ALL TASKS	ALL WORK
TASK CODE FOR SOUTH		TS 3	TS 6	TS 1 to 7	TS 8	TS 9	TS 1-9	TS 1-9	TS 1 -9
TASK - WEST	Eng	42.2	47.6	43.3	50	46.9	45.2	44.9	45
	E	55.1	52.4	54.3	50	47.9	51.2	50.9	51
	A	2.7	0.0	2.4	0	5.2	3.6	4.2	4
	T	100	100	100	100	100	100	100	100
TASK - EAST	Eng	29.7	42.3	32	12.5	18.4	25.5	25.3	25.1
	E	62.4	60.9	60.9	59.5	59.5	59.8	59.7	59.1
	A	7.9	7.1	7.1	22.1	22.1	14.7	15.1	15.4
	T	100	100	100	100			100	100
TASK - SOUTH	Eng	0	0	2.1	0		2.0	1.2	1.8
	E		100	11.0			10.5	11.7	11.5
	A	100		86.9			82.9	81.5	81.2
	N	0	0	0	100		4.6	5.6	5.5
	T	100	100	100	100		100	100	100

Eng: Engineering E: Equipment A: Assembly and/or civil engineering N: None T: Total

Table 3, which presents the ranking of the West and East according to the tasks of the South, summarizes the different cases in point:

(1) Whenever the South carries out the assembly tasks, the work structure of the West is the lowest.

TABLE 3.—INTERNAL RANK FOR WEST (OR EAST) WORK STRUCTURE ACCORDING TO WHAT THE SOUTH DOES [1]

Task performed by the South	Code	Ranking	
		West	East
None	TS 8	1	6
Assembly	TS 3	6	3
Equipment and Assembly/civil engineering	TS 6	2	1
All Actual tasks	TS 1-7	3	2
All tasks	TS 1-9	4	4
Unknown	TS 9	4	5

[1] The ranking is derived from table 2.

(2) Whenever there is East-West cooperation in a third country with the absence of participation by the Southern host, the East-West complementarity is stronger in terms of the level of work structure; the difference in the rows clearly shows this (1 for the West, 6 for the East);

(3) Whenever the South carries out both the engineering and assembly functions, the work structure of the East is the highest; and that, as a general rule, the participation of the South raises the work structure level of the Eastern pole, which increases the risk of competition with the West, as indicated by the closeness of the numbers (2 for the West, 1 for the East).

These two last points if taken together show that, in the domain of TIC, the East has an intermediate nature: it is dominated by the West whenever the South is weak, but, on the other hand, its work structure rises whenever the South participates.

C. Dynamic Analysis of the Work Structures

1. APPROPRIATENESS OF THE INTRODUCTION OF TIME

The following dynamic analysis of TIC has two main objectives: The first is to determine whether the introduction of time into the analysis of TIC by the dividing of the sample into two sub-periods—1958–1975, on the one hand, and 1976–1981, on the other—involves the appearance of paradoxes with respect to the partial conclusions provided in the preceding parts for the total period 1958–1981.[26]

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[26] The choice of 1975 as the date for the division of the sample into two parts is justified in three ways:

(1) Statistically, the year 1975 divides it into two subsets that provide a similar number of cases (138 up to 1975 and 117 afterwards);

(2) From a tactical point of view, the practice of TIC by the engineering and turnkey operation firms was developed before 1975 by chance in international awards without it being possible to speak of a prepared and researched strategy: as of 1975, one sees, to the contrary, the signing of a large number of protocols to cooperate in third countries, there consequently being a real institutionalization of TIC as an international industrial marketing tactic;

(3) Historically, it was the moment when the countries of OPEC imported turnkey plants on a large scale, after the increase in the price of oil; therefore, half of the cases in the sample were

Continued

The second, a more general objective, is directly tied to the evaluation of TIC as a practical modality whose primary purpose is to put turnkey plants into operation in the Third World: Is it an instrument adapted to the interests of the South?

In short, the interest in a dynamic approach is precisely to see if the South is seeing its role expanding from one period to another, and to study the evolution of the East-West interaction in an effort to detect any effect in the hierarchy of the work structures.

2. EVOLUTION OF THE WORK STRUCTURES

One must evaluate the evolution of the work structures before examining the industrial expertise of the partners and the possible consequences for the future of TIC.

It is possible to envision variations in the work structures of the East, West, and South on three levels: first, when combining all cases; second, in cases in which the West is the leading partner from those; and third in cases in which the East is the leading partner.

(a) All cases combined

The East and West register tiny variations in their work structures from one time period to the other, but in an inverse order (cf. Table 4). The West sees its engineering role grow, while the East registers an infinitesimal improvement in its equipment function. For each, there is a relative decline in the other high-level task, although the growth of the differentials by task between the East and West for the two highest level functions—engineering and equipment—acts in an opposite way. This seems to lead to an increase in the stability of the East-West complementarity rather than to its reduction, and all the more because the East is globally seeing the quality of its work structure decline.

For the South, it appears that its work structure shrinks with respect to the first period, with a strong increase in assembly/civil engineering after 1975 (Assembly/civil engineering also seems to grow with respect to the partners of the East and West after 1975).

(b) Examination by pole: the West as leading partner

The more important proportion of the engineering carried out by the West as lead country after 1975 involved an enrichment of its work structure to the extent that the increase in engineering did more than compensate for the decrease in equipment in terms of the level of the work structure.

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undertaken within OPEC countries. In addition, it was at this time that the crisis began to be felt in the industrialized nations.

The division date adopted is thus pertinent for carrying out the possible modifications in the work structure hierarchy with respect to the evolution of productive systems.

Table 4

EVOLUTION OF WORK STRUCTURES BY POLE

Western Tasks

Lead Country - WEST

TASKS	Eng	Equi	A/CE	None
<1975	46.4	50	3.6	0
>1975	48.3	48.3	3.4	0
Evol	↗	↘	↘	=

RISE

Lead Country - EAST

TASKS	Eng	Equip	A/CE	None
<1975	40	57.3	2.7	0
>1975	43.4	51.8	4.8	0
Evol.	↗	↘	↗	=

STABILITY

COMBINED

TASKS	Eng.	Equi	A/CE	None
<1975	44.2	52.6	3.3	0
>1975	46.3	49.8	4.0	0
Evol.	↗	↘	↗	=

STABILITY

Eastern Tasks

Lead Country - WEST

TASKS	Eng	Equi	A/CE	None
<1975	12.2	70	17.8	0
>1975	13.9	72.2	13.9	0
Evol	↗	↗	↘	=

RISE

Lead Country - EAST

TASKS	Eng	Equi	A/CE	None
<1975	39.3	50.5	10.3	0
>1975	31.3	51.5	17.2	0
Evol.	↘	↗	↗	=

DECLINE

COMBINED

TASKS	Eng.	Equi	E/CE	None
<1975	26.9	59.4	13.7	0
>1975	24.0	60.2	15.8	0
Evol.	↘	↗	↗	=

DECLINE

Southern Tasks

Lead Country - WEST

TASKS	Eng	Equi	A/CE	None
<1975	2.1	12.5	75	10.4
>1975	0	0	100	0
Evol	↘	↘	↗	↘

STABILITY

DECLINE (Actual Tasks)

Lead Country - EAST

TASKS	Eng	Equi	A/CE	None
<1975	3.6	14.5	81.8	0
>1975	0	7.1	85.7	7.1
Evol.	↘	↘	↗	↗

DECLINE

COMBINED

TASKS	Eng	Equip	A/CE	None
<1975	2.9	13.6	78.6	4.9
>1975	0	4.1	91.8	4.1
Evol.	↘	↘	↗	↘

STABILITY

DECLINE (ACTUAL TASKS)

Eng: Engineering   Equi: Equipment   A/CE: Assembly, Civil Engineering

Similarly, the East after 1975 shows an increase in its provision of equipment and engineering services, which leads it, without any ambiguity whatsoever, to a higher level work structure as a principal partner after 1975 than before—an even more interesting element when compared with the general deterioration that the East has experienced. (Cf. Table 4).

With respect to the South, it experiences a contradictory process of change that rests on a double phenomenon when the West acts as the leading partner:

> On the one hand, the total disappearance in the second period of the two highest level functions of its work structure, which had been present until 1975;
>
> On the other, the elimination of an absence of tasks ("none" function) which is replaced exclusively by a limited role in assembly and civil engineering.

In terms of the level of tasks, it is clear that the relative improvement involved in the disappearance of the task "none" does not make it possible, if one goes by actual tasks, to compensate for the total elimination of engineering and furnishing of equipment.

(c) Examination by pole: the East as the leading partner

Whenever the West works along with an Eastern leading partner, one can note an increase in the engineering function of the West as principal partner, proportionately more important than whenever it itself is the leading partner. This improvement in engineering since 1975 is, nevertheless, counteracted by a noticeable reduction in equipment (51.8% as opposed to 57.3%). The relative weight of the equipment task in the work structure of the West as principal partner remains therefore, higher—in spite of its decrease since 1975—than whenever the West itself is the leading partner, whatever the period.

With respect to the assembly and civil engineering function, its relative weight often has the tendency to increase with the East as leading partner, while it decreases with the West in that role. This evolution is registered noticeably in the Western attempt for superior performance.

For the East as leading partner, the dominant trait resides in the strong decrease in engineering in its work structure since 1975 (39.3% to 31.3%). This decrease cannot be corrected by a one point increase in the equipment function nor by changes in assembly/civil engineering, which registers strong growth in the second period. In addition, if one pursues the analysis in terms of differentials, it can be seen that engineering decreases 8 points with the East as leading partner, while it increases 1.7 points with the East as principal partner. It is a significant enough decrease in the relative weight of the engineering function to result not only in a decline in the overall work structure of the East when it serves as the leading partner but also in a decline for the East when all types of participations are combined.

With the East as the leading partner, the South sees its work structure decrease for two reasons:

(1) As with the West as leading partner, the South registers a decline in the relative weight of the two highest level functions: engineering disappears entirely and the equipment function is reduced

by half (14.5% to 7.1%); the latter point, however, is less negative than with the West as leading partner (12.5% to 0%).

(2) An evolution of the two lowest level functions seems to be occurring in contradictory directions: if the assembly/civil engineering shows a relative improvement, one can also see a clear decline due to the appearance of the "none" function, which had been excluded from the work structure of the South prior to 1975 when the East acted as the leading partner.

It is quite paradoxical to note that the East, which claims to desire to make the South participate more in its own development, as a general rule, causes it to participate at a lower level in the second period than in the first, whereas the inverse comes about with the West as leading partner. In addition, if one compares the evolution of the assembly/civil engineering function of the East and the South, it can be seen that this function grows more proportionately for the East (10% to 17.2%) than for the South (81.8% to 85.7%).

This last point, if it tended to become a permanent element, would be of such a nature that it would endanger the East-South complementarity. It would be even more serious if the South, in regard to its work structure, were to carry out the assembly/civil engineering, the lowest task in the hierarchy of tasks.

Above all, this dynamic examination reveals a negative evolution of the East as lead country, which is very enlightening with respect to the participation of the East in TIC in general. In fact, it appears that the East is using its relative weakness as an element of complementarity with respect to the West as leading partner, which explains why the countries of the East wish to participate as principal partners. That goes back to the intermediary and pivotal role of the East in TIC: The international subcontracting of equipment and/or assembly/civil engineering by the East allows the leading partner—Western as well as Eastern—to win international bids, thanks to the decrease in the total cost resulting from the inclusion of the East.[27] Aware of this, the partners of the West and East have made a systematic use of the East-West association in order to optimize the proposal for bids before the international call for them. Hence, a growing number of general agreements have been signed between Western turnkey operators and engineering firms, and Eastern foreign trade organizations (FTOs) in order to cooperate in third countries.

This East-West cooperation in third countries corresponds to an internationalization of bids tied to attempts for greater competitiveness. TIC is, in fact, a particularly effective international industrial marketing tactic in the context of more and more lively intercapitalist competition. Its rationale then rests on the absolute advantage involved in East-West association.[28] An assessment of the evolution of the technological gap between East and West in TIC remains to be done and a neo-technological interpretation may be helpful in such an undertaking.

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[27] Monographs of TIC operations involving French firms and Western ones, in general, underline the competitive nature of the East European participation, in particular, for the commonplace equipment/civil engineering. This characteristic trait also appears in the recent studies of the UN-ECE, of the Bundesverband der Deutschen Industrie (BDI) and in the studies of F. Levcik on the Austrian case and Gutman/Arkwright on the French case (See the bibliography).

[28] Which has been emphasized by the East European authors, Hungarian, and Polish managers, in particular. Cf. the articles by Kemenes, Raba, Golonscer, Pados (Hungary) and Zagorski, Zurawicki (Poland) in the bibliography.

3. TECHNOLOGICAL GAP AND THE APPRENTICESHIP EFFECT

According to what has been noted so far, the recourse to TIC does not noticeably improve the place of the countries of the South in the hierarchy of productive systems.

On the one hand, there is the mechanism of the international bidding, which favors competition more than cooperation between East and South; the East-West complementarity is even greater when the South does not participate.[29] When the South does participate in the completion of its own industrial complexes, its principal role is the assembly/civil engineering (which, in the second period, with the West as leading partner, is its only actual work).

Moreover, although the East tends, statically, to raise the level of its work structure when the South intervenes, the dynamic analysis shows that after 1975 the East-South complementarity tends to decline, the East doing more of the assembly when it is the lead country, which sometimes compels the South to remain inactive.

It appears, in fact, that if there is a technological gap between the West and East, on the one hand, and between the East and South, on the other—which underlines perfectly the work structures of the East, West and South poles and the hierarchy that follows from this—the decisive element is the industrial expertise defined as the experience of the transfer of know-how and not just the transfer of capital goods. Thus, the rationale for the participation of countries of the East lies in the apprenticeship effect.

The Hungarian economist Andras Raba insists on this point when he emphasizes that "the triple effect of acting together, adaptation and learning process is a striking characteristic of Tripartite Cooperation. Here we examine this phenomenon not from the point of view of the developing countries, but from that of the socialist and capitalist firms working in cooperation." Raba goes yet a little further: "Of course, the adaptation is more difficult for the partner whose technical knowledge is at a lower level and whose experience in the organizational domain is less" and he concludes that "any company that cooperates with a foreign partner at a higher technological level will adapt itself towards the higher. It will learn the strict technological standards; it will attain the quality, exactness and rapidity required."[30]

The countries of the East, having a lower level work structure than the West, seek in TIC the experience and the expertise in the turnkey operation role that the latter possesses.[31]

Knowing that its own work structure began to decline as a leading partner with the second period, the East has great interest in increasing its cases of participation as principal partner alongside the West as leading partner, which makes it possible for it to raise its global work structure (cf. Table 4).

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[29] The cost of labor is higher in the East than in the South and this should lead to cooperation, but dumping from the East—especially for assembly and civil engineering—lowers the cost and stimulates competition with the South.

[30] Cf. Andras Raba, "Cooperations tripartites: branche specifique de la Division Internationale du Travail," pp. 172 and 173 in Tendances de l''Economie Mondiale, no. 41 (Changements, strategies et cooperations sous la direction d'Egon Kemenes), Budapest, 1982.

[31] Apart from evident motivations such as the sale of equipment to procure currency or raw materials through developing countries.

The question that is now asked is of knowing to what point the West can allow itself to let the East improve its work structure as principal partner. To the extent that the West is faced with a nonzero sum game (except in rank) it should be able to tolerate an improvement in the work structure of the East as principal partner since it will be able to raise the level of its own work structure, notably by reserving for itself a higher proportion of the engineering. The validity of this reasoning rests on the hypothesis of a continuous gap in industrial and technological expertise in favor of the West both vis-a-vis the East and South as well as for the East vis-a-vis the South.

If the dynamic analysis of the work structures seems to reveal a positive evolution for the West during the 1976–1981 period, as compared to the earlier period, this may not hold true in the future. In addition, other collections of data would be necessary to relate the work structures to structural variables and, in particular those related to the productive systems of the different countries: factor endowments, skills in the area of technology, research-development and financial determinants.

IV. Conclusion

At the conclusion of this work, it seems appropriate to identify how the preceding discussion helped in formulating a response to the question raised at the outset on the possibility of contradictions between the microeconomic interests of Western firms and the strategic interests of the Western State Nations.

The contribution of the geopolitical analysis based on factorial correspondence is the following: the East seems to draw a more important gain than the West from the practice of TIC. The study of cluster 3 clearly underlines the fact that there is a penetration of pro-West countries of the South by the East without corresponding the benefit to the West.

Similarly, the contribution of the analysis in terms of work structures is the following: (1) the West has been and continues to be characterized by a higher level work structure, and (2) the work structure of the East has declined, particularly as a leading partner, although the CMEA has a strong interest to be involved in TIC as principal partner in order to increase its industrial expertise in the completion of entire complexes and, thus, benefit from its contact with Western turnkey operators through the apprenticeship effect. This effect could prove useful for domestic, as well as foreign purposes, in particular, to promote more efficient East-South Industrial Cooperation from a technological point of view. This might allow a more aggressive penetration corresponding to "counter-imperalism." [32]

These two statements lead one to wonder about the nature of the gains derived by the East and West from TIC. It seems that the West is not in a position to extract more than temporary gains by using the competitive prices of the East in order to respond to supplementary international bidding calls. The East, without closing the technological gap that separates it from the West, is in a position to benefit from an apprenticeship effect in the exercise of technology transfer itself. It is, therefore, a strategy of acquisition of know-how that reduces the problems of assimilation as opposed to a passive transfer of techniques in which the East is in a position of simple receiver.

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[32] Cf. Lowenthal, "Soviet Counterimperialism," Problems of Communism 25 (6), pp. 52–63.

It also appears, if the analysis is now expanded, that CMEA participation in TIC fits fully with the logic of the rationale in East-South relations.

In view of the marked concentration of East-South cooperation in only a limited number of partners, TIC provides the East with a measured opportunity for increasing involvement with the South. Still, because of the diversification of the LDCs being penetrated—the great majority of the LDCs aimed at are in the sphere of Western influence—Eastern involvement becomes of even more interest. What is new in the practice of TIC by the East with respect to East-South Industrial Cooperation is its acceptance of the West as a rival-partner, because in the long-term, the objective of TIC is the maximization of one's own gains. It is thus a modality that consists less of relying on partners of one's own sphere of influence than on partners of the adverse sphere of influence that one tries to integrate into one's sphere.

East-South Industrial Cooperation and TIC complement each other very well within the framework of a global strategy. They form diversified means—used alternatively or simultaneously—depending on the circumstances and opportunities of the moment. The recourse to TIC, parallel to the pursuit of an expansion of East-South Industrial Cooperation, is nothing else than the manifestation of a pragmatic will to provide oneself with a more flexible complementary means of presence, which, in addition, offers technological credibility of its partnership with the West.

Finally, TIC allows CMEA to lower the financial cost of its exports of capital goods to the South by having them partially subsidized by the West: in fact, whenever the leading partners are Western firms, they generally subcontract some of the equipment to socialist Foreign Trade Organizations (FTOs). This equipment benefits in varying degrees from export credits and guarantees granted to Western material.[33] Because of this, TIC is for CMEA a judicious practice that might contribute to decreasing the high cost of East South expansionism, and this precisely in a period of crisis in the East, when the mechanism of the allocation of resources hinders the transfer of production aimed overseas.[34]

TIC thus shows the opportunism and the skill of the East, the ability that it has to seize upon the contradictions between the microeconomic interests of firms and the strategic interests of Western nations to minimize the cost of its own involvement in the South and, above all, to maximize its political and economic gains.

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[33] Cf. W. Hendricks, "Banking and Financial Aspects of Tripartite Industrial Cooperation," UNCTAD, TAD/SEM. 1/4, 11 November 1975, 12 pages (Seminar on industrial specialization through various forms of multilateral cooperation, Geneva, 2-5 December 1975).

[34] This is not pure chance, if over these last three or four years there has been some reorientation of the CMEA assistance pattern to the profit of the Communist developing nations whose part has increased strongly through the total of the LDC recipients. So it is logical that the LDCs aimed at by CMEA in TIC are precisely the non-Communist developing nations of the "rich" South (50% in OPEC).

Even if TIC is only a "second best" strategy, it offers proof that the East has in a period of deep economic transformation and international tension known how to utilize fully a pragmatic formula of cooperation that allows it to involve the West to improve CMEA relations with the South.

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ANNEX I.—THE FIVE ZONES OF HOST COUNTRIES: BREAKDOWN BY INDIVIDUAL COUNTRIES

Maghreb and Middle East	Africa	Latin America	Asia	Miscellaneous
Algeria	Angola	Argentina	Afghanistan	Cyprus
Egypt	Cameroon	Bolivia	Bangladesh	Greece
Arab Emirates	Congo	Brazil	Ceylon	Turkey
Iraq	Dahomey	Chile	North Korea	
Iran	Ethiopia	Colombia	India	
Jordan	Gabon	Cuba	Indonesia	
Kuwait	Guinea	Ecuador	Malaysia	
Lebanon	Madagascar	Paraguay	Pakistan	
Libya	Mauritania	Peru	Philippines	
Morocco	Nigeria	Uruguay	Singapore	
Syria	Senegal	Venezuela	Thailand	
Tunisia	Sudan			
Yemen	Tanzania			
	Togo			
	Zambia			

ANNEX II.—THE DATA: SOURCES AND TREATMENT

A. The Sources

A sample of the TIC cases has been put together by P. Gutman. A large part of these cases have been reported in the economic and industrial press which has been the object of a systematic examination for the period 1970-1981.[1] Some cases—and notably those which involve France—come from surveys of companies. In total, the sample includes some 255 cases that occur between 1958 and 1981, and it can be stated that it is not far from being exhaustive. This will permit us to identify the sample with the population of TIC cases and to save ourselves the necessity of recourse to the sampling theory at the time of the interpretation of the results.

Our sample does not however include the cases in which Yugoslavia has the status of host country of tripartite operations. Unlike UNCTAD[2]—but like the

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[1] Particularly: East-West Markets, Business Eastern Europe, The Reuter East-West Trade News, Moscow Narodny Bank Press Bulletin, Marketing in Hungary, La Revue de l'Economie Polonaise, Le Moniteur du Commerce International, Les Echos, Le Courrier des Pays de l'Est.

[2] UNCTAD, "Cooperation Industrielle Tripartite" (Study of the Secretariat TAD/SEM. 1/2 Nov. 25, 1975. 53 pages.

United Nations Economic Commission for Europe[3]—we do not consider Yugoslavia to be a host country of the South, but only an East European partner.

This choice is based on political considerations and is confirmed by the analysis of the work structure hierarchy: Yugoslavia is, in the work structures hierarchy, higher than all of the host countries.[4]

B. Coding and Computerization of the Data

The information contained in the press sources or obtained through companies should be the object of a homogeneous treatment. Therefore, we have prepared a standard form that has been conceived in such a way as to utilize all of the information available on all cases, but also the information that was available for only a significant portion of them. The modality "unknown" has therefore been included for some questions. We present below the variables utilized in this work.

1.—The countries

The file indicates the countries involved in TIC, i.e., at least three countries per case: one country of the West, one country of the East, and one country of the South (the host country). But several countries of the West, the East or even the South can participate in a given case. We have thus introduced the distinction between the leading partner, principal partner, and other participants.

When there was no leading partner in the legal sense of the term, we designated as leading partner the country which initiated the project. A close examination of the sources has made it possible for us to distinguish this country from the principal partner, and the latter from the other possible participants without many risks of error.[5] These latter appear as second level subcontractors. Therefore, to the extent that the file never has the South appear as principal partner, the latter is necessarily a country of the East or West belonging to the opposite block from that of the leading partner.

Since the number of countries involved is large (80) and their participation is sometimes weak, the information has also been coded by geopolitical zones, distinguishing EEC/non-EEC for the West, USSR/non-USSR for the East, and five zones for the host countries: Africa, Latin America, Asia, the Maghreb and Middle East, and finally, the category Miscellaneous.[6] The examinations can thus be made at the level of the countries and at that of the zones.

2.—The sectors

For the quasi-totality of the TIC cases, the sectoral nature of the projects is known. Therefore, a variable sector (1 and 2 digits) has been coded in relation to the end use of the industrial complexes completed.

3.—The date

For the majority of the file, the year of the signing of the contracts is available. In addition, a more aggregate period variable has been coded (up to 1975/after 1975).

4.—The tasks

The very careful reading of the sources and a knowledge of firms acquired through previous works[7] has allowed us to pinpoint the division of work among the partners. We have thus distinguished three *simple tasks:* engineering,[8] subcontract-

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[3] UN-ECE, "Promotion of trade through industrial cooperation: tripartite industrial cooperation contracts: results of an inquiry." (Note by the Secretariat). Trade/R. 373/Add. 1, Oct. 12, 1978, 44 pages and annexes.

[4] Cf. G. Ballot and P. Gutman, "Economie Politique de la Cooperation Industrielle Tripartite Est-Ouest-Sud-Analyse de la hierarchie des structures de taches," op. cit., table 6, p. 19.

[5] We have often been able to find several press sources for a given case.

[6] It includes exclusively Greece, Cyprus and Turkey. Cf. Annex I.

[7] P. Gutman and F. Arkwright, "Tripartite Industrial Cooperation Between East, West and South," Chapter 4, pp. 185–214 in F.E. Ian Hamilton and G.J.R. Linge (eds.), *Spatial Analysis Industry and the Industrial Environment*, Volume II, John Wiley & Sons, New York, 1981, 652 pages.

P. Gutman, "Tripartite Industrial Cooperation and East Europe," *op. cit.;*

P. Gutman, "Tripartite Industrial Cooperation and Third Countries," *op. cit.*

[8] Engineering in this study has the American meaning of the term, a study of the conception of investments and management of their realization, a function to which we have added the

Continued

ing of equipment, and assembly and/or civil engineering. (In addition, it has been necessary to define the tasks "unknown"[9] and "none". Then we have five tasks which we call elementary tasks.) As a partner can simultaneously carry out several of these tasks, we have defined multiple tasks, which are four in number ("engineering/subcontracting," "engineering/assembly and/or civil engineering," "subcontracting/assembly and/or civil engineering," "engineering, subcontracting, assembly and/or civil engineering"). (Then we have a total of nine possible tasks which bear the general name of "composite tasks".)

It should also be noted that all of the information is of a qualitative nature. That has thus been the object of coding in the form of a logical table where each variable takes the value of 1 for a modality and the value of 0 for the others.

ANNEX III.—CHOICE OF VARIABLES AND MODALITIES FOR THE POLITICAL-ECONOMIC CHART

The data analysis technique used is the factorial correspondence analysis. Its purpose is to deal with logical tables on the condition that they are presented in a complete disjunctive form (the modalities of response are mutually exclusive and only one modality can be chosen at a time).[10] This is the case with our file (cf. Annex II).

Some countries of the East and West participate little in TIC. It has been necessary, in accordance with usage, to eliminate these countries, since the part of inertia for a modality is all the greater because the population in this modiality is weak.[11] The determination of factorial axes in these cases would have obscured the analysis. We have retained the total number of cases of participation in TIC as the criterion of selection (cf. Table III.1).

The threshold for selection has been chosen so that all the countries of the East (except for Bulgaria) are placed in principal modalities. We have thus eliminated Belgium, Canada, Denmark, Spain, Finland, Ireland, Norway, the Netherlands, and Sweden.[12] Finally, we have had to place Great Britain, the GDR, and Switzerland in supplementary modalities as leading partners, since their participation was weak.

In the principal variables, we have not retained the variable "other participants," which indicates the participation in TIC by countries of the East, the West or even of the South with respect to second level subcontractors. It has seemed to us that had we kept that variable, other participants would have been given weight equal to that of the leading partners and principal partners, a weight that they do not have in TIC. A later study of the entire file, including the other cases of participation, is however foreseeable as long as provision is made for a system of weights.

We have also had to eliminate all of the host countries which participated in fewer than three cases. The list of the host countries is therefore limited to 17 countries (see plan 1 X 2 in Fig. 1). The disadvantage of this selection is that Africa (to the South of the Sahara) and Latin America are highly underrepresented at the host country level: These zones have then been represented as principal modalities and the countries belonging to the zones that have been selected (Cameroon, Nigeria, Sudan, Brazil) have assumed the status of supplementary modalities.

The first analysis made with the selection of the modalities set forth below will not be presented. In fact, the contribution of the USSR (principal partner) to the second factor is too important and obscures the analysis. This exclusion is even more justified since the weight of the USSR as principal partner is relatively weak. Therefore, the analysis has been redone by putting the USSR (as principal partner) into a supplementary modality.

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furnishing of possible processes. It seems to us in fact logical to attach the furnishing of possible processes to the engineering function to the extent that the adoption of a process often follows from choices made by the consulting-engineer (in the conception of the entire project). In addition, the selection of a specific process can induce effects with respect to the types of equipment to choose.

[9] This in fact only involves the South, whose firms are not always designated and whose participation may be poorly specified.

[10] On this type of analysis consult Lebart L., Morineau A., Tabard N., "Techniques de la description statistique," Dunod, Paris, 1977, pp. 123–152.

[11] Ibid., p. 135.

[12] The cases of TIC (i.e. the observations in terms of data analysis) in which they participate have of course not been eliminated since these cases often involved countries with strong participation.

TABLE III.1.—COUNTRIES OF THE WEST AND THE EAST, PRINCIPAL VARIABLES

[Number of cases of participation]

Country	Leading partner	Principal partner	Other participant	Total
Austria	23	6	4	33
Bulgaria	3	6	3	12
France	40	20	22	82
Great Britain	3	13	10	26
Hungary	32	31	2	65
Italy	15	17	11	43
Japan	8	4	6	18
Poland	17	39	3	59
German Democratic Republic	3	11	2	16
Federal Republic of Germany	32	27	14	73
Romania	10	11	1	22
Switzerland	1	7	11	19
Czechoslovakia	9	14	2	25
U.S.S.R.	20	6	4	20
United States	3	7	7	17
Yugoslavia	19	21	6	46

II. INTERNATIONAL FINANCE AND DEBT

OVERVIEW

By Allen Lenz *

Eastern Europe's two-way hard currency trade peaked at $86 billion in 1980, then declined to a low of $71.3 billion in 1982. In 1984, it climbed back to about $74 billion, still about $12 billion below the 1980 level. The decline, of course, has been largely in EE imports. Imports from the West, which reached $47.3 billion in 1980, were only $33.0 billion in 1983 and totalled about $34.5 billion in 1984. The sharp cuts were forced by a reduction in Western lending that began with the Polish financial crisis, then spread to Romania and the rest of Eastern Europe, and subsequently to a number of less developed countries.

This crisis-forced contraction of trade has reemphasized facts that were always obvious, but sometimes overlooked in Western eagerness to expand exports and competition among banks to provide financing.

A nation's ability to import from foreign sources is essentially determined by the sum of its export revenues plus net inflows from foreign direct investment, plus whatever foreign exchange it can borrow, plus withdrawals from its reserves, minus foreign exchange expenditures for debt services and other invisibles (freight, shipping, tourism). Though occasional joint ventures may bring in small amounts of Western investment, foreign direct investment is not a significant source of capital for East European countries. Thus, assuming no drawdown of reserves, East European imports must, in essence, be limited to the sum of exports plus new borrowings, minus debt servicing costs.

During much of the 1970s most of the countries of Eastern Europe attempted to spur their economic growth by imports of Western goods and technology significantly in excess of their exports to the West. Over the 1975–1980 period the cumulative East European deficit on hard currency merchandise trade (including trade with LDCs) was about $31.5 billion. Over the same period Western commercial bank loans to Eastern Europe increased by about $45 billion.

Borrowing to finance trade deficits implicitly presumes, of course, that the loans will make possible a growth in export capacity greater than the interest rate on the loans. International lending anticipates a lag between loans and the expected growth in

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* Director, Office of Trade and Investment Analysis, International Trade Association, Department of Commerce.

export capabilities. Thus, for short periods, the foreign exchange needed to finance continued trade deficits and to service already existing loans may be partly obtained by new loans. Over the longer term, however, the foreign exchange must come from increased exports of goods and services. Lenders will not expand lending indefinitely—even to sovereign governments—without evidence of an increased export capability, or a reasonable expectation that an increased capability will soon be realized.

A number of factors combined in 1981 and 1982 to bring Eastern Europe's debt problem to a head. Fundamentally, however, the 1981 contraction in bank lending to Eastern Europe that forced a reduction in East European imports was a recognition—albeit perhaps belatedly—that neither actual or prospective growth of EE exports capabilities had kept pace with the growth of EE debt.

Recent improvements in EE trade performance—mostly achieved by reductions of imports, rather than by export expansion—have generated substantial trade surpluses and reductions in debt to Western banks. As a result, some EE countries with relatively low debt levels may be able to resume modest borrowing that would maintain their debt at or near current levels and allow modest import increases. Others, with larger debt and poorer export and debt payment performance can not yet do so. Poland, of course, faces extremely difficult economic problems that will require years to overcome before its creditworthiness can be restored.

In any event, it seems clear that Western lending will not soon again provide the fuel for a major expansion of East-West trade by financing large EE trade deficits. Rather, for the foreseeable future, there will at best be only modest expansions of bank lending. Instead, whatever future trade growth can be achieved must come largely from an expansion of Eastern exports to the West that would allow parallel increases in Eastern imports from the West.

The five papers in this section enlarge on these general themes and provide a rich panoply of information and statistical data describing the evolution of Eastern Europe's international debt and financial problems, how these problems have been handled, the effects on trade, and the outlook for the future.

Lawrence J. Brainard, in his paper, "Trade and Payments Problems in Eastern Europe", argues against the view that Eastern Europe has debt beyond its ability to cope. He points out that only three of eight Eastern Europe countries have sought debt rescheduling, while all the countries of South America except two are rescheduling their debts. He further notes that East European countries have managed their debt problems by effective actions, boosting exports and cutting imports, and that Poland's inability to manage its economic problems represents the exception rather than the rule in Eastern Europe.

In "Financial Crisis in Eastern Europe", Allen E. Clapp and Harvey Shapiro describe the evolution of the Polish financial crisis, its effects on other Eastern European countries and their responses. They see the 1980–82 financial crisis as a watershed in East-West economic relations, with Eastern import reductions—necessitated by their financial plight—as depressing their future export capabilities. They also see Western lenders in the future taking a more realistic view of Eastern Europe that would not only differentiate more between individual borrowers and require better and more comprehensive economic and financial data, but would also regard loans to governments as being by no means risk-free.

Gabriel Eichler's "The Debt Crisis: A Schematic View of Rescheduling in Eastern Europe", explores in general terms the phenomenon of rescheduling from the point of view of the creditors, drawing on the East European experience. He constructs a conceptual model of an external payments crisis leading to rescheduling which, from the creditors' point of view has four phases, which he terms initial, euphoria, concern, and crisis. He then describes the rescheduling process in general terms, noting that governments thrust into the spotlight of a major rescheduling may find it necessary to enforce a rigorous clamp down on "non-essential" imports, while pressing to boost exports by reducing supplies to the civilian population. He points out that the longer-term effect of these measures can be disastrous and may exacerbate and prolong the period of crisis.

Eichler's general description of the rescheduling process is then supplemented by specifics from the Polish and Romanian cases and lessons to be drawn from these experiences for both lenders and borrowers.

In "East European Financial Relations with the West and Perspectives for Trade", Gerhard Fink and Kurt Mauler briefly describe the development of the debt crisis in the 1970s and the early 1980s. The bulk of their work, however, is devoted to two scenarios for East-West trade for the next several years, based on differing assumptions about OECD growth rates, Western credit availability, etc. Detailed projections of debt and trade levels through 1990 are provided for each of the scenarios and conclusions drawn from analyses of the projections are provided. Given Poland's financial condition, the data provided by the Polish scenarios are particularly interesting.

Generally, Fink and Mauler conclude that, excepting Poland, the external debt problems of EE have been reduced to manageable dimensions and that, most probably, no crisis is ahead if EE governments pursue cautious economic policies and can improve competitiveness in Western and LDC markets. They also note, however, that judicious debt management by EE governments and the continued cooperation of Western banks will be needed, and that a Western economic upswing will also be important to success.

A most revealing conclusion, however, is their statement:

> From a Western exporter's point of view we can express our findings in one sentence: If there is business in the West, there will be business in the East too.

This one sentence statement neatly summarizes the conclusions of their work and that of others—there will not be another significant increase of Western exports based on an expansion of Western lending; rather, Western exports to Eastern Europe can increase only roughly in parallel with Western imports from Eastern Europe.

The authors of the study, "Eastern Europe Faces Up to the Debt Crisis," also describe the evolution of the East European debt crisis and provide a country-by-country performance analysis and outlook. In assessing the longer term outlook, they conclude that while Eastern Europe may look better now because of the trade adjustments made in 1981–82, the region's longer run economic prospects are probably bleak. They also conclude, as have others, that recent EE import cuts are a short-run expedient that will have little positive impact on long term creditworthiness, and that bankers will instead likely look for evidence that EE is making structural changes that will boost its exports to the West; i.e., bankers will be looking for the increased EE ability to do "business in the West" that Fink and Mauler find a prerequisite to further "business in the East".

The key question then is, can EE significantly expand its exports to the West? The answer is uncertain, but it will be very much affected by the concurrent LDC debt crisis in at least two ways. First, LDCs have become an increasingly important market for EE exports, taking about one-third of total EE exports in 1981. Now that LDCs are experiencing their own debt problems, they are handling them in much the same way as did Eastern Europe—by sharply cutting back imports. A first question is, then, in the face of overall LDC import cuts, can EE increase its exports to LDCs?

Second, to cope with their debt problems LDCs are pressing hard to expand their exports to developed countries. How will EE fare in a competition for developed country markets that is now more intense than before? The answer is uncertain, but the analysts from the Central Intelligence Agency make an important observation:

> Some bankers consider the Western recession as only partly responsible for disappointing (EE) export performance in recent years and they remain skeptical that the East Europeans will or can do as much as financially-troubled LDCs to correct their fundamental problems.

This pessimistic evaluation is supported by empirical data cited in other studies that show the East European share of the total imports of 14 industrialized Western countries over the 1976 to 1981 period declining from 1.5 percent of total to 1.2 percent, while the share of a selected group of LDCs rose from 6.4 percent to 8.3 percent.

To summarize, there is general agreement that any significant expansion of Eastern Europe's trade with the West will not be based on new debt, but rather will require a strong increase in East European exports to the West that most see as unlikely. If this analysis is correct, East European trade with the West can grow only modestly in the years just ahead.

EASTERN EUROPE FACES UP TO THE DEBT CRISIS

(By Analysts of the Central Intelligence Agency)

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I. SUMMARY

Most of Eastern Europe has withstood the severe credit crunch that began in 1980, but the region remains financially troubled. The peak of the crisis occurred in the first part of 1982 when it seemed that several countries were on the brink of default. The freeze on lending forced the regimes to impose severe import reductions and resulted in the region's first trade and current account surpluses in more than a decade. With the incipient economic recovery in the West and some signs of easing in creditor attitudes, the worst of the crisis is probably over.

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Some countries may yet have to reschedule their debts, however, and most will continue to look to the West for financial assistance. Even with some improvement in Eastern Europe's credit rating, new lending almost certainly will remain well below the levels of the 1970s for the foreseeable future. As a result, all countries will need to rely more on their own resources, which will increase pressure for more systemic solutions to economic problems. The adjustment process almost certainly will increase the risk of internal instability and will present problems and opportunities for the USSR and the West.

This study first reviews the evolution of Eastern Europe's financial crisis from a regional perspective. It then considers how the countries have used various financial options in dealing with their problems, and projects prospects through 1985. We also consider the impact of debt problems in terms of adjustments in foreign trade and on future relations with Western creditors. Finally, the paper analyzes the implications of the debt crisis for East European decision makers, as they formulate policies to overcome their financial problems and try to get their economies back on track.

II. The Credit Crunch Begins

The attitudes and policies of the 1970's that opened the West's credit windows to Eastern Europe gradually gave way in 1980–82 to caution, skepticism, worry, and finally, a sharp cutback in lending. The first warning of the credit crunch came in 1980 when net credit flows from Western banks (new credits less repayments) slowed to $5.3 billion, less than half the 1979 level (Table 1).[1] Poland accounted for most of the decline, reflecting rising concern among bankers about Warsaw's solvency, but net credit flows to the other countries fell as well.

The credit squeeze tightened significantly in 1981 when bank claims on Eastern Europe fell by $1.5 billion. The Poles and the Romanians shouldered the largest reductions in bank exposure and had to reschedule, but Hungary and Czechoslovakia also paid debts more quickly than planned. East Germany and Yugoslavia—shouldering the largest financing requirements after Poland—managed to obtain a net inflow of credit but at substantially reduced levels from previous years. Only in Bulgaria did the reduction in debt to banks probably reflect regime intentions.

The slowdown in bank lending in 1980–81 involved medium-term commercial credits, particularly syndicated Eurodollar loans. After peaking at $6.9 billion in 1979, syndicated loans slowed to $3.0 billion by 1981 (Table 2). This type of lending was most affected by worsening banker attitudes because syndicated loans generally involve a lengthy commitment without a Western government guarantee and usually do not finance sales made by bank clients.

With fewer medium-term loans available, the East Europeans had to draw down reserves and rely on more short-term borrowing. This placed growing strains on the liquidity position of most countries. During the first half of 1981, the East Europeans reduced their cash holdings in Western banks from $9.3 billion to $7.8 billion. Between July and December, the East Europeans shifted toward more short-term borrowing to cover their financing requirements and to stem the loss of reserves. This compressed the maturity structure of their debt and raised interest costs.

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[1] The financial and trade data presented in this paper are in nominal terms. We have not adjusted for price and exchange rate movements because we lack adequate price indexes and data on the currency composition of trade and credit flows.

TABLE 1.—NET FINANCING FLOWS FROM WESTERN BANKS [1]

[In millions of U.S. dollars]

	1975	1976	1977	1978	1979	1980	1981	1982	1983 [2]
Eastern Europe	5,877	6,048	5,824	10,715	11,252	5,342	−1,513	−6,685	−4,797
Bulgaria	628	407	428	556	−86	−495	−489	−320	−206
Czechoslovakia	5	609	510	485	950	541	−224	−473	−138
East Germany	1,164	1,170	715	1,494	1,760	1,375	805	−1,874	−642
Hungary	892	892	1,413	1,747	1,058	64	−305	−940	−443
Poland	2,427	2,550	1,327	3,167	3,393	339	−890	−1,373	−2,386
Romania	133	−163	470	1,406	1,552	1,362	−707	−826	−436
Yugoslavia	628	583	961	1,860	2,625	2,156	297	−879	−546

[1] Net financing flows equal changes in the stock of bank claims as reported in the Bank for International Settlements (BIS) statistics. This reflects new credits less repayments.

[2] January–September.

TABLE 2.—SYNDICATED LOANS FOR EASTERN EUROPE, 1976–83

[In millions of U.S. dollars]

	1976	1977	1978	1979	1980	1981	1982	1983 [1]
Total	1,120	1,696	4,549	6,914	5,037	3,026	935	1,740
Poland	425	186	739	901	1,089	106	0	0
Romania	0	50	453	1,100	458	337	0	0
Yugoslavia	100	323	1,415	2,291	1,972	1,371	439	615
East Germany	65	542	916	782	481	627	62	392
Hungary	150	350	600	1,047	550	573	434	683
Czechoslovakia	260	0	150	461	487	4	0	50
Bulgaria	120	245	276	332	0	8	0	0

[1] 1 January to 30 September 1983.

Sources: Euromoney and World Financial Markets.

III. REASONS FOR CHANGING CREDITOR ATTITUDES

Eastern Europe's borrowing problems emerged first as one result of the chill in East-West relations following the Soviet invasion of Afghanistan. After mid-1980, developments in Poland began to dominate creditors' attitudes. To a large extent, the new attitude reflected doubts about the ability of the East European countries to use credits wisely, to sell exports in highly competitive and depressed Western markets, and to maintain appropriate investment and consumption on policies.

A. Warsaw's Bad Examples

Poland's bankruptcy in early 1981 shattered several assumptions that had served to boost Western lending to Eastern Europe in the 1970s. East European countries had been able to point to largely unblemished payments records, a consideration that offset the paucity of data released to lenders. Western lenders believed that the centralized management of the East European countries' finances was sufficient protection and that these countries could impose controls quickly to balance their external accounts. CEMA (Council of Mutual Economic Assistance) countries enjoyed the image of being financial conservatives who would not borrow unless they were sure they could repay.[2] By late 1980, it was clear that Poland's debt had become unmanageable and that new loans were sought mainly to service old ones. Subsequently, the payments coming due exceeded the new loans coming in, and Warsaw was unable to meet its payments. In March 1981 Warsaw declared a moratorium on debt service, the first open admission by a CEMA borrower that it could not meet its financial obligations.

B. The Umbrella Theory

Much of the lending of the 1970s was founded on faith in "the umbrella theory," which held that the USSR is the unwritten guarantor of loans to CEMA countries. Lenders reasoned that Moscow's desire to protect its own credit rating and that of its allies would lead the USSR to police CEMA borrowers and bail out any that got into trouble. Although by the late 1970s bankers relied less on faith in the umbrella and more on their views of individual borrowers, they still expected the USSR to come to Poland's financial rescue.[3] Moscow provided some hard currency help in early 1981, but Poland's debt burden proved to be more than Moscow could or would bear.

C. Romania Follows Poland

The change in perceptions was reinforced when Romania joined Poland in the ranks of the insolvent in the summer of 1981. Romania fell far behind in its payments to Western suppliers and agreed in early 1982 that a rescheduling was necessary. With two of the seven East European countries unable to meet their obligations, lenders began to wonder who would be next.

D. Eastern Europe's Own Economic Problems

After their experiences with Polish and Romanian payment difficulties, bankers became increasingly concerned about Eastern Europe's economic problems and prospects. Closer looks at other countries in the region led to some worrisome signs.

The dependence of Eastern Europe on the USSR initially had been regarded as an advantage. Moscow produced substantial exportable surpluses of oil, natural gas, iron ore, and other raw materials that it sold to CEMA countries in large quantities for soft currencies at prices well below world levels. Soviet supplies thus had sheltered Eastern Europe from the world price explosions and shortages of the 1970s. Doubts arose about the strength of the Soviet prop for Eastern Europe, however, once economic stagnation in the USSR and slower growth or cutbacks in exports of oil and other crucial Soviet products darkened prospects for the CEMA countries.

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[2] Porter, Suzanne, F. "East-West Trade Financing" U.S. Department of Commerce, 1976.

[3] Cammeron, Juan, "What the Bankers Did to Poland," Fortune, Sept. 22, 1980.

The results of East European programs to import capital goods from the West proved disappointing. Loans provided throughout the 1970s were often for industrial or raw material development projects that were expected to spur economic growth and to generate exports to repay the loans. Some of these projects turned out well, but many of them were delayed or never reached expected capacities. Slow and shoddy construction, raw material shortages, management problems, and inability of the labor force to operate foreign equipment all became evident.

E. Political Factors

In the early and mid-1970s, lenders believed that detente had given them a green light. They rapidly increased lending to the East, often with Western governments as partners through export loans or guarantees. The political euphoria began to fade by the late 1970s, and the invasion of Afghanistan at the end of 1979 led to a pause of several months in syndicated credits for Eastern Europe. The formation of Solidarity in 1980 and its contest for political power with the Polish regime forced bankers to give more weight to political risk factors in decisions about lending to Eastern Europe. Increasingly chilly East-West political relations compounded their caution about the region. Throughout 1981, the Polish crisis and the possibility of a Soviet invasion added to the economic factors slowing lending to the East. The December 1981 crackdown on Solidarity and the resulting actual and proposed economic sanctions provided the final impetus for the collapse of lending to Eastern Europe.

IV. THE CRASH OF 1982

Against a backdrop of bad publicity about Eastern Europe's economic performance, worsening East-West relations, and troubled reschedulings with Poland and Romania, bankers moved quickly in early 1982 to slash their exposure to the region, giving little or no consideration to the relative creditworthiness of individual countries. Commercial banks reduced their gross claims on Eastern Europe by $6.7 billion or by 12 percent of their yearend 1981 exposure (Table 1). In percentage terms, the reductions in bank exposure ranged from a high of 18 percent for East Germany, 12 to 16 percent for Hungary, Bulgaria, Czechoslovakia and Romania, to less than 10 percent for Yugoslavia and Poland.[4] [5]

The credit squeeze on Eastern Europe was comparatively more severe than that on the developing countries. Whereas Eastern Europe suffered an outright reduction in credit lines, banks continued to provide a net flow of loans to developing countries, albeit at a much slower annual rate of increase in 1982 (10 percent) than in preceding years (24 percent annually in 1979–81) (Table 3). Even the most financially troubled developing countries, such as Mexico, Brazil, and Argentina, increased their debt to Western banks in 1982. Consequently, the East Europeans were under even greater pressure for adjustment than the Third World.

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[4] The strengthening of the dollar in 1982 overstates the decline in bank exposure to the extent credits are denominated in currencies other than the dollar. The BIS estimates that roughly one-third of the decrease in Eastern Europe's debt to Western banks—when measured in U.S. dollars—resulted from exchange rate movements.

[5] Since Poland paid off a very small portion of its obligations to banks, most of the reduction in Poland's liabilities reflected bank write-offs of loans and payments of claims on bank loans insured by Western governments.

TABLE 3.—WESTERN BANK CLAIMS BY REGIONS

[In millions of U.S. dollars]

	1974	1975	1976	1977	1978	1978	1980	1981	1982	1983[1]
Total bank claims	326,987	441,667	547,569	689,660	902,979	1,110,909	1,321,919	1,549,440	1,687,522	1,707,195
Eastern Europe	11,664	17,521	23,569	29,393	40,108	50,236	55,835	54,322	47,637	43,708
Developing countries[2]	77,488	124,289	163,707	197,800	243,695	309,315	379,121	464,253	512,563	580,624
Developed countries	215,268	273,971	323,599	401,614	531,515	652,791	780,518	909,911	996,329	1,002,249
Other	22,587	25,886	36,694	60,853	87,661	98,567	106,445	120,954	130,993	80,614

[1] January–September.
[2] Excludes oil exporting countries.

Source: Bank for International Settlements.

The crisis was most severe in the first half of 1982 when Western banks reduced their short-term exposure in addition to refusing requests for new medium-term credits. This dealt a severe blow because most countries had become dependent on short-term borrowings to cover their financing requirements after the halt in medium-term lending. Using BIS (Bank for International Settlements) data on the maturity structure of East European debt, we estimate that Western banks reduced short-term claims on Eastern Europe from $11.3 billion to $8.2 billion and rolled over only $3.6 billion of the $9.1 billion in maturing medium- and long-term debt. A sizeable share of the credits Eastern Europe obtained from banks presumably came from drawdowns of undisbursed commitments, which fell from $6.4 billion at yearend 1981 to $4.1 billion at the end of 1982. Some of the decline probably reflected cancellation of unused credit lines as well.

With other financial options running out, the East Europeans reduced substantially their deposits with Western banks early in the year. With cash reserves at or near minimal levels needed for day-to-day trade transactions, most regimes slashed imports. This enabled the region to run its first hard currency trade surplus in more than 20 years and to bring its current account into balance. The East Europeans were able to pay off $2.0 billion to banks in the last three quarters of 1982 and to rebuild their reserve by $1.5 billion. The East Europeans placed a higher priority on rebuilding their financial strength than on increasing imports, perhaps for fear that they would be subjected to renewed withdrawals of short-term credits.

V. IMPACT ON TRADE

The credit crunch of 1980–82 produced a dramatic shift in Eastern Europe's hard currency trade. In marked contrast to the record deficit of $11.9 billion in 1979, the region attained a surplus of $1.5 billion by 1982 (Table 4). In 1980 trade adjustment had focused on both increases in exports and slower growth of imports. But as credits dried up and exports sagged in 1981–82, almost all countries had to cut imports sharply. The East Europeans slashed imports by nearly 30 percent over the two-year period with the deepest cuts made by Poland, Romania, and East Germany. The $12.4 billion reduction in imports lowered the region's estimated financing requirements by about 15 percent.

TABLE 4.—EASTERN EUROPE: HARD CURRENCY TRADE

[In millions of U.S. dollars]

	1979	1980	1981	1982	1983	1984
Exports—Total	33,339	38,830	37,387	36,405	37,981	40,275
Bulgaria	2,335	3,021	3,198	3,195	2,879	3,000
Czechoslovakia	3,734	4,597	4,691	4,099	4,142	4,275
East Germany	4,541	6,565	6,714	7,172	7,500	7,900
Hungary	4,063	4,911	4,877	4,876	4,960	5,100
Poland	6,350	7,506	4,971	4,974	5,600	6,200
Romania	5,522	6,574	7,216	6,235	6,600	7,000
Yugoslavia	6,794	5,656	5,720	5,854	6,300	6,800

TABLE 4.—EASTERN EUROPE: HARD CURRENCY TRADE—Continued

[In millions of U.S. dollars]

	1979	1980	1981	1982	1983	1984
Imports—Total	45,214	47,302	41,065	34,921	34,387	36,200
Bulgaria	1,621	2,035	2,546	2,572	2,415	2,500
Czechoslovakia	4,117	4,590	4,432	3,614	3,372	3,500
East Germany	6,566	8,145	6,654	5,663	6,500	7,300
Hungary	4,230	4,632	4,417	4,111	4,100	4,200
Poland	8,038	8,488	5,404	4,616	4,900	5,000
Romania	6,623	8,091	7,012	4,710	5,000	5,300
Yugoslavia	14,019	11,321	10,600	9,635	8,100	8,400
Balance—Total	-11,875	-8,472	-3,678	1,484	3,594	4,075
Bulgaria	714	986	652	623	464	500
Czechoslovakia	-383	7	259	485	770	775
East Germany	-2,025	-1,580	60	1,509	1,000	600
Hungary	-167	279	460	765	860	900
Poland	-1,688	-982	-433	358	700	1,200
Romania	-1,101	-1,517	204	1,525	1,600	1,700
Yugoslavia	-7,225	-5,665	-4,880	-3,781	-1,800	-1,600

Source: Official East European and OECD trade statistics. Totals for 1983 are preliminary estimates based on partial year statistics. Totals for 1984 are projections based upon announced trade plans.

Planners focused import cuts on those items that would have the least immediate impact on their economies and populations. Purchases of capital equipment were put off, wherever possible, because their loss would not jeopardize current production. The share of machinery and transportation equipment in imports from the developed West fell from 40 percent in 1977 to 31 percent in 1981. Restrictions were less severe on imports of raw materials, chemicals, and other semifinished goods needed for production, which together maintained their 45 percent share of imports from developed countries. Most regimes were cautious about reducing purchases of consumer goods and foodstuffs; the share of these goods in imports rose from 12 to 22 percent between 1977 and 1981 but may have declined somewhat in 1982 because the good harvest permitted substantial cutbacks in grain imports.

VI. Varying Impact, Differing Responses

The financial problems of the individual East European countries varied in terms of their timing and severity and evoked differing responses from the regimes. Nearly all countries engaged in crisis management in 1982 when they struggled to cover their financing requirements by squeezing payments surpluses out of their economies, negotiating rescheduling arrangements with creditors, or pressing Western agencies for emergency help to avoid reschedulings. By late 1983, Eastern Europe—except for Poland—had stabilized its financial position, but the region was far from having solved its debt problems. For the foreseeable future, most countrioes face the prospect of difficult negotiations, with lenders over debt relief or new credits and the need to continue restraining imports and pressing exports.

VII. POLAND

Unable to service its debt after March 1981, Poland became the first East European country to reschedule. As 1982 began, it was evident that Warsaw was still not on the road to financial recovery. Poland was $400 million in arrears on interest payments necessary to conclude the 1981 bank rescheduling agreement; payments were completed in March 1982 and the agreement was signed in April.[6] In January, Western governments protested the imposition of martial law by refusing to reschedule 1982 debt and by not extending new government-guaranteed credits. Warsaw responded by suspending payments to government creditors.

TABLE 5.—POLAND: FINANCING REQUIREMENT AND SOURCES, 1982–84

[In millions of U.S. dollars]

	1982	1983[1]	1984[2]
Financing requirement	11,123	14,340	16,920
Current account[3]	−3,259	−1,960	−900
Trade account	358	700	1,200
Exports	4,974	5,600	6,200
Imports	4,616	4,900	5,000
Interest[3]	−4,019	−3,000	−2,400
Other invisibles, net (excluding interest)	402	340	300
Short-term debt repayments, net	−110	0	0
Medium-and long-term debt repayment due	−7,186	−5,079	−3,730
Paris Club creditors	2,698	1,836	1,890
Banks	[4]2,442	[4]1,417	570
Other creditors	2,046	1,826	1,270
Arrearages from previous year	−573	−7,301	−12,290
Net Credit extended	5	0	0
Sources of financing	3,822	2,050	([5])
Credits	1,677	800	200
Debt relief	[6]2,050	1,200	....
Other	95	50	....
Arrears/gap	7,301	12,290	([5])

[1] Preliminary.

[2] Projection.

[3] Amounts are for interest due rather than interest paid. Because Poland has not paid all interest due, the figures for interest and the current accounts deficits overstate the hard currency outflows.

[4] Includes principal payments deferred until the following year under the bank rescheduling agreements for 1981 and 1982.

[5] Not available.

[6] Includes interest deferred until 1983 under the 1982 bank agreement.

Sources: Most of the trade and payments data in this table and in the text on Poland are from various issues on Wharton Econometric Forecasting Associates, "Wharton Balance of Payments and Debt Forecast" and "Current Analysis". Other important sources are Gerhard Fink, "Poland's Statistics on Current Account of the Balance of Payments in Convertible Currencies" Vienna Institute of Comparative Economic Studies. 1983; East-West (Fortnightly Bulletin), Oct. 20, 1983, and Nov. 17, 1983; Polish projections: Law on the Balance of Payments in 1983, Dec. 29, 1982, and draft balance of payments for 1984.

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[6] New York Times, April 7, 1982.

Warsaw negotiated debt relief from Western banks in 1982 on more generous terms than in 1981. Although Western banks held off rescheduling for the first several months of the year, by midyear they were willing to begin negotiating. In August the banks and Poles agreed to reschedule 95 percent of principal—the same as in 1981.[7] Unlike the year before, the banks agreed to defer interest payments due in 1982 for payment in three installments in November and December 1982 and March 1983. Another major concession was that the banks agreed to relend 50 percent of interest payments in the form of short-term trade credits to finance imports from the West earmarked for Polish export industries.[8]

Despite more generous terms from commercial banks, Warsaw managed to cover less than half of its $11-billion financing requirement for 1982. Debt relief from banks covered $2.6 billion, including deferred interest, and credits provided $1.5 billion in loan receipts. Under pressure to meet bank rescheduling terms, Warsaw also ran a surplus of $760 million on its current account (excluding interest), largely by slashing imports by 15 percent. The bulk of receipts was used to cover payments due to banks under rescheduling agreements. Arrears to other creditors—including Western governments—probably exceeded $7 billion.

A. Payments Developments in 1983

The Law on the Balance of Payments for 1983, enacted by the Polish parliament, projected a hard currency trade surplus of $700 million, a surplus on services (except for interest) of $340 million, and $800 million in credit inflows.[9] Trade data indicate that Warsaw met or even exceeded its target for a trade surplus, although exports and imports were below planned levels.

The flow of new credits to Poland apparently has slowed to a trickle. In the first half of 1983, Warsaw obtained $332 million in new medium- and long-term credits and $330 million in short-term credits under the 1982 bank rescheduling agreement. According to Polish press statements, prospects for lining up the remainder of the $800 million in projected loans were dubious.

B. Debt Service Due

Warsaw's obligations to creditors totaled some $15 billion in 1983, half of which were principal and interest unpaid from 1982 and payments due in 1983 to Western government creditors. Under original loan contracts, Poland owed Western banks $1.3 billion in medium- and long-term principal, and some $600 million in interest; about $500 million was owed under bank rescheduling agreements. Finally, more than $2 billion in principal and interest was due to creditors outside the Paris Club and the Western bank group. Obligations to this group may have been much larger because of arrears from 1982.

As in 1982, Warsaw finished the year with a huge financing gap representing debt service obligations that were neither paid nor rescheduled. A surplus of more than $1 billion on trade and services and credits of $600–$800 million allowed Warsaw to pay about $2 billion in debt service. Debt relief from bank creditors covered another $1.3 billion, leaving arrearages of at least $10 billion to be carried into 1984.

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[7] Wall Street Journal, Aug. 19, 1982.

[8] East-West (Fortnightly Bulletin), Nov. 10, 1982.

[9] Zycie Gospodarcze, Dec. 12, 1982.

C. Rescheduling Negotiations

Rescheduling in 1983 got off to a slow start. Western governments continued to refuse to reschedule Polish debt through the first half of the year, but in July they agreed in principle to begin negotiations;[10] the first meeting with the Poles since martial law was held in November.[11] In negotiations with the banks, the Poles initially tabled a proposal to reschedule to the 1990–2002 period all debt due between 1983 and 1985 under original loans contracts.[12] By midyear, the Poles had reduced their demands significantly, and during negotiations in Vienna in August, both sides agreed to reschedule 95 percent of principal for 10 years with a five-year grace period.[13] The banks agreed to relend Poland 65 percent of the interest payments as trade credits.

D. Prospects for 1984

The plan for 1984, submitted to the Polish parliament in December, calls for a surplus—probably on hard currency trade and on services except interest—of $1.5 billion.[14] The Poles also plan to obtain new loans of $200 million, giving Warsaw total financing sources of $1.7 billion—less than the roughly $2 billion in debt service that the Poles managed to pay in each of the previous two years. Debt service due will be some $18 billion, counting arrearages from 1983 and obligations due in 1984 under original loan contracts and rescheduling agreements. The outcome of negotiations with Western government creditors will be the key to Poland's success in covering these obligations.

E. Longer Term Outlook

Beyond 1984, the outlook is no less bleak. Because Poland is unlikely to be able to pay the interest on its debt for many years, the debts will grow by the amount of unpaid interest and creditors will involuntarily have to increase their exposure. The arithmetic of the process shows that the longer financial recovery takes, the more difficult it will be to achieve. As long as interest is unpaid, both the debt and the interest payments required to service the debt will grow. For example, if Warsaw can pay only $1 billion in interest annually, the debt will increase to $40 billion by 1990, and annual interest payments will reach $4 billion.

To stem the increase in its debt, Poland must balance its current account; that is, generate net earnings equivalent to annual interest payments. Financial recovery requires a revival in economic growth and a regime decision to allocate more resources to support production and to repay foreign creditors rather than to continue to boost domestic consumption. Thus, it will require a massive commitment by the regime and the people to economic growth and large sacrifices in living standards over many years. At this point there is no such commitment and the regime instead has concentrated on trying to stabilize the economy and on providing minimal levels of consumer satisfaction. The regime undoubtedly would like more Western credits in order to finance imports which, in turn, would be expected to increase production and exports. This policy is similar to the path followed in the late 1970s, which ended in the present crisis. This time Poland's economic prospects leave creditors unwilling to risk further increases in exposure.

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[10] Washington Post, July 30, 1983.
[11] Financial Times, Nov. 16, 1983.
[12] Wall Street Journal, Apr. 26, 1983.
[13] New York Times, Aug. 19, 1983.
[14] Trybuna Ludu, Dec. 6, 1983.

VIII. ROMANIA

The credit crunch hit Romania in 1981 when Western banks sharply curtailed lending and withdrew deposits.[15] The bank pull-out reflected concerns about Poland, but it was mostly due to doubts about Bucharest's creditworthiness. Despite the approval of an IMF standby program in June, arrears began to mount in the summer and reached $1.1 billion by the end of the year.

Bucharest approached Western banks in early 1982 with a request for rescheduling.[16] After 11 months of negotiations, Romania and Western banks signed an agreement on 7 December to reschedule 80 percent of arrears from 1981 and principal payments—including short-term debt—due in 1982.[17] The Paris Club agreed in July to reschedule 80 percent of principal and interest payments due in 1982 and arrears from 1981, providing debt relief of $400 million.[18] The agreement covered only medium- and long-term debt.

TABLE 6.—ROMANIA: FINANCING REQUIREMENTS AND SOURCES 1982–84

[In millions of U.S dollars]

	1982	1983 [1]	1984 [2]
Financing requirement	4,040	2,214	612
Current account	655	800	870
Trade	1,525	1,600	1,700
Exports	6,235	6,600	7,000
Imports	4,170	5,000	5,300
Net interest	−917	−805	−788
Other services	47	5	−42
Debt repayments	−3,170	−2,478	−1,282
Medium- and long-term	2,151	1,319	1,028
Short term	1,019	1,159	254
Net credits extended	−382	−148	−200
Arrears from previous year	−1,143	−388	(3)
Financing sources	3,678	(3)	(3)
Credits	1,522	(3)	(3)
Medium- and long-term	657	(3)	(3)
Short term	564	(3)	(3)

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[15] Bank for International Settlements.

[16] Financial Times, Feb. 2, 1982.

[17] Wall Street Journal, Nov. 20, 1982.

[18] Wharton Econometrics Forecasting Associates, Romania, Feb. 4, 1983.

TABLE 6.—ROMANIA: FINANCING REQUIREMENTS AND SOURCES 1982-84—Continued

[In millions of U.S dollars]

	1982	1983 [1]	1984 [2]
IMF, net	301	(3)	(3)
Debt relief	1,700	749	0
Reserve drawdown	456	(3)	(3)
Errors and omissions	−26	(3)	(3)
Financing gap/arrears	388	(3)	(3)

[1] Preliminary.
[2] Projected.
[3] Not available.

Sources: Most of the trade and payments data in this table and in the text on Romania are from various issues of Wharton Econometric Forecasting Associates, "Wharton Balance of Payments and Debt Forecast" and "Current Analysis." Other important sources are International Monetary Fund, "International Financial Statistics," January 1984 and Financial Times, Oct. 19, 1983.

Debt relief and new credits were inadequate to cover Romania's $4-billion financing requirement for 1982. Bucharest reacted to the shortfall by cutting imports by one-third to earn a hard currency trade surplus of $1.5 billion—an improvement of $3 billion compared with 1980. Despite the drastic adjustment, Romania was still nearly $400 million in arrears at the end of the year.[19] Moreover, the import cuts intensified shortages of food, gasoline, and other consumer goods.[20] Consumption fell for the first time since World War II, and the rate of growth of industrial production fell to a postwar low of 1 percent.

Although only sketchy and partial data are available, Bucharest apparently managed further improvement in its hard currency accounts in 1983. Large surpluses on the trade and current accounts allowed Romania to reduce its debt for the second year in a row. Nonetheless, debt relief from Western banks and governments was needed, and it is doubtful that enough financing was available to cover payments that were not rescheduled.

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[19] International Monetary Fund, International Financial Statistics, January, 1984.
[20] Financial Times, Apr. 7, 1983.

TABLE 7. RESCHEDULING AGREEMENTS

Agreement	Date of signature	Obligations covered	Amount of debt relief	Repayment terms	
				Interest rate	Repayment period
Poland:					
1981 Paris Club Agreement [1]	Apr. 27, 1981	90 percent of principal and interest on medium- and long-term loans in arrears and due May 1–December 1981.	$2.2 billion	Varies with creditor	1986–89.
1981 Bank Agreement [1]	Apr. 6, 1982	95 percent of principal payments on medium- and long-term debt Mar. 26, 1981–Dec. 31, 1981.	$2.3 billion	LIBOR plus 1.75 percent	1985–88.
1982 Bank Agreement [2]	Nov. 7, 1982	95 percent of principal payments on medium- and long-term debt due in 1982.	$2.2 billion	LIBOR plus 1.75 percent	1985–89.
1983 Bank Agreement [3]	Nov. 1983	95 percent of principal payments on medium- and long-term debt due in 1983.	$1.2 billion	LIBOR plus 1.875 percent	1988–92.
Romania:					
1982 Bank Agreement [4]	Dec. 7, 1982	80 percent of payments on all debt, including short-term.	$1.3 billion	LIBOR plus 1.75 percent	1985–88.
1982 Paris Club Agreement [4]	July 28, 1982	80 percent of payments on medium- and long-term debt.	$400 million	Varies with creditors	1985–88.
1983 Bank Agreement [5]	June 23, 1983	70 percent of payments due in 1983	$601 million	LIBOR plus 1.75 percent	10 percent of rescheduled amount [illegible] in 1984; remainder to be paid March 1987 to September 1989
1983 Paris Club Agreement [6]	May 18, 1983	60 percent of principal payments on medium- and long-term debt.	$148 million	Varies with creditor	1986–89
Yugoslavia: 1983 Bank Agreement [7]	Sept. 9, 1983	100 percent of principal payments on medium- and long-term debt and maintenance of short-term trade lines at Jan. 17, 1983 level.	$1.9 billion in debt relief plus $600 million in new credits.	LIBOR plus 1.78 percent or US prime plus 1.7 percent.	1986–89.

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[1] East-West (Fortnightly Bulletin), Oct. 20, 1983.
[2] Wharton Econometric Forecasting Associates, Wharton Balance of Payments and Debt Forecast, Poland, Jan. 26, 1983.
[3] East-West (Fortnightly Bulletin), Nov. 17, 1983.
[4] Wharton Econometric Forecasting Associates, Wharton Balance of Payments and Debt Forecast, Feb. 4, 1983.
[5] East-West (Fortnightly Bulletin), June 23, 1983.
[6] Wall Street Journal, May 20, 1983.
[7] Journal of Commerce, Sept. 12, 1983.

Romania held to its strategy of painful adjustment by squeezing a substantial net flow of resources out of the economy in 1983. Bucharest aimed for a hard currency current account surplus of $800 million on the strength of a $1.6 billion trade surplus. Led by a large increase in sales of refined oil products, exports were slated to grow by 6 percent. Imports were set to rise slightly to $5 billion—still far below the 1980 peak of $8.1 billion. Deputy Finance Minister Bituleanu told the Financial Times that, through mid-1983, Romania was on target for meeting its trade and current account targets.[21] He also acknowledged, however, that import cuts were continuing, implying that export shortfalls were forcing import savings in order to earn the planned trade surplus. The Western press reported continued shortages of food and other consumer goods.

Bucharest's effort to reschedule its 1983 debt to the banks went smoothly, especially compared with the 1982 negotiations. Creditors were uncertain about whether debt relief would be needed, but at the end of 1982 Bucharest informed its creditors that payments due in 1983 would be suspended pending conclusion of a rescheduling agreement.[22] In February 1983, major Western banks agreed on tougher terms than for 1982: only 70 percent of some $900 million in principal payments to banks were rescheduled instead of the 80 percent in 1982, and short-term debt was not covered.[23] Moreover, all the unrescheduled principal was due in the second half of 1983, and some of the rescheduled amount is due in 1984.[24] This agreement with the banks was signed in June 1983. The Paris Club got off to a slower start because of Romania's continuing problems in wrapping up bilateral accords with Western governments related to the previous year's Paris Club agreement.[25] On 18 May 1983, the Paris Club finally met and quickly agreed to reschedule 60 percent of principal due in 1983 on medium- and long-term guaranteed credits.

The Romanians appear to have achieved their oft-stated goal of avoiding further rescheduling in 1984.[26] Another huge trade surplus of $1.7 billion is projected, and debt service obligations are lower because Bucharest has crossed the hump in its debt maturity schedule. In order to meet its payments on time, Romania will have to cope with the expiration of the IMF-standby arrangement, possibly arrears from 1983, and continued restricted access to credits.

In narrow financial terms, Bucharest's turnaround has been the greatest in Eastern Europe and one of the most dramatic among all problem debtors. The progress, however, has been costly and may be short-lived. The huge trade surpluses—totalling $5 billion from 1982 through 1984—that have been the key feature of Romania's financial strategy have drained the economy and damaged the outlook for genuine recovery. Drastic import cuts, rather than export gains, have generated the foreign exchange needed to pay the substantial amounts of unrescheduled debt service in 1982 and 1983.

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[21] Financial Times, Nov. 19, 1983.
[22] Wall Street Journal, Jan. 4, 1983.
[23] Business Eastern Europe, Feb. 11, 1983.
[24] East-West (Fortnightly Bulletin), June 23, 1983.
[25] East European Market, Mar. 18, 1983.
[26] Journal of Commerce, Oct. 31, 1983.

Moreover, the breathing space associated with the rescheduling ends in 1985 when Bucharest must begin to repay obligations rescheduled in 1981. This will put pressure on the regime to continue earning large trade surpluses to cover external obligations and to deal with underlying economic problems that hurt competitiveness and continue to prevent sustainable and balanced growth.

IX. HUNGARY

The pull-out of $1.1 billion in short-term credits by Western, OPEC, and Soviet bloc banks pushed Hungary into a liquidity crisis in early 1982. Between January and March, Budapest's liquid reserves fell from $1.7 billion to $460 million, roughly one month's worth of imports. To forestall a rescheduling, the Hungarians appealed for help from Western central banks and the BIS, which extended $510 million in short-term bridge loans. This show of official Western support encouraged 15 commercial banks to arrange a $260 million commercial loan for Hungary shortly thereafter.[27]

After temporizing for several months over tightening adjustment measures, Budapest moved during the second half of 1982 to raise prices and cut subsidies on some consumer goods and services, impose controls on hard currency imports, and devalue the forint. These measures helped boost the trade surplus and reduced Hungary's current account deficit to $172 million from $720 million in 1981. In December, the IMF approved a $100 million drawing under the compensatory financing facility and a one-year standby facility worth $520 million; approximately one-third of the funds was disbursed immediately. These loans and the improving current account enabled Hungary to meet its debt service obligations and rebuild its foreign exchange reserves to nearly $1.2 billion by year-end.[28]

TABLE 8.—HUNGARY: FINANCING REQUIREMENTS, 1982–84

[In millions of U.S. dollars]

	1982	1983[1]	1984[2]
Financing requirement	4,097	2,471	2,750
Current account balance	−172	300	375
Trade balance	765	860	900
Exports	4,876	4,960	5,100
Imports	4,111	4,100	4,200
Net interest	−976	−600	−575
Other net invisibles	39	40	50
Repayments of medium- and long-term debt	−882	−936	−1,500
Repayments of short-term debt	−2,848	−1,640	−1,500
Export credits extended, net	−195	−195	−125
Borrowing sources	3,175	2,726	(3)
Medium- and long-term credits	1,105	861	(3)

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[27] Wharton Econometric Forecasting Associates, "Hungarian External Financial Situation in 1982," Centrally Planned Economies Balance of Payments and Debt Report, July 2, 1982.

[28] Wharton Econometric Forecasting Associates, "Hungarian Foreign Trade Performance in 1982," Centrally Planned Economies Current Analysis, vol. III, No. 33, May 4, 1983.

TABLE 8.—HUNGARY: FINANCING REQUIREMENTS, 1982–84—Continued

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Short-term credits	1,535	1,500	(3)
IMF credits	235	365	437
BIS credit, net	300	0	(3)
Change in reserves	−922	255	(3)

[1] Preliminary estimate.
[2] Projected.
[3] Not available.

Sources: IMF, International Financial Statistics; Wharton Econometric Forecasting Associates, "Hungarian Foreign Trade Performance in 1982," Centrally Planned Economies Current Analysis, vol. III, No. 33, May 4, 1983; Wharton Econometric Forecasting Associates, Balance of Payments and Debt Report, Dec. 9, 1983. Various issues of Statisztikai Havi Koezlemenyek. East-West Fortnightly Bulletin, Jan. 31, 1984.

A. Performance in 1983

Hungary's IMF-assisted strategy for 1983 envisioned rebuilding Budapest's financial strength through a $600 million current account surplus, which would be used to bring hard currency reserves back to the 1981 level of $1.7 billion. Exports were to grow by 8 percent while imports were to be held at the 1982 level in order to raise the trade surplus to $1.1 billion. This was to be accomplished through some reduction in consumption and major cuts in investments. The Hungarians planned to cover roughly $1 billion in debt repayments through untied bank loans, World Bank credits, greater use of trade financing, and drawdown of the IMF standby facility.[29]

Hungary met some, but not all of its 1983 financial goals. The borrowing campaign fared reasonably well. In addition to the $366 million still available from the IMF, Budapest obtained a $200 million three-year club loan from Western banks, $239 million in project credits from the World Bank, a $275 million commercial loan to confinance the World Bank projects, and more trade credits.[30] Data published in International Financial Statistics indicate some further loss of short-term credits in early 1983 although the outflow apparently stopped by midyear. The major disappointment was that the trade surplus reached only $860 million and current account surplus rose to only $300 million.[31] Overly buoyant domestic demand bore some of the blame, but depressed export prices and a substandard grain harvest also kept export gains well below the original goal. The smaller than planned current account surplus, the loss of some short-term credits, and late payments from cash-short LDC clients limited the increase in reserves to approximately $250 million.

B. Outlook

The disappointing outcome for the current account and reserves leaves Hungary in a tenuous financial position, facing heavy debt repayments in 1984–86. Maturing medium- and long-term obligations jump to $1.5 billion in 1984 and $1.6 billion in 1985, before easing slightly to $1.2 billion in 1986.[32] Budapest is counting on covering some of these obligations through new credits from banks. Lender unease about Hungary's outlook, however, poses a major obstacle to raising more large loans. In January 1984, Budapest obtained an additional $437 million from the IMF in conjunction with another one-year stabilization program, and the Hungarians plan to approach the World Bank for more loans. The quid-pro-quo demanded by these institutions undoubtedly is a commitment to forge ahead with domestic adjustments measures and structural reforms. Tighter restraints on domestic demand and improvements in the economy's efficiency and competitiveness are imperative in order to increase the trade surplus, the single most important means to revive lender confidence and combat financial strains. Trade prospects also depend on the willingness of Hungary's CEMA trade partners, in particular the USSR, to allow Budapest to continue running large surpluses in intra-CEMA hard currency trade. In recent years the intra-CEMA hard currency surpluses have offset Hungary's deficits in trade with the West and ensured an overall convertible currency trade surplus.

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[29] Ibid.
[30] Journal of Commerce, Nov. 3, 1983.
[31] Authors' estimate based upon data published in the official Hungarian monthly statistical bulletin.

Hungary's bankers exude confidence that they can avoid a renewed financial crisis. They insist that a debt rescheduling would increase borrowing costs and yield little relief in managing medium and long-term debt.[33] Nonetheless, the problems facing Budapest in the near term could prove as trying as the 1982 crisis, and the possibility of a debt rescheduling in 1984–85 remains.

X. EAST GERMANY

The rapid withdrawal of bank credit lines in early 1982 pushed East Germany toward a liquidity crisis similar to Hungary's. Between January and September, East Berlin's deposits in Western banks dropped from $2.2 billion to $1.3 billion. Unlike the Hungarians, however, the East Germans did not have recourse to the BIS or the IMF for emergency financial support. Instead, East Germany had to manage the credit squeeze through tough adjustment measures and skillful cash management.

The East Germans moved their hard currency current account from a $500 million deficit in 1981 to a $1.3 billion surplus in 1982. Imports fell an estimated 15 percent due to cutbacks in purchases of grain, capital goods, industrial materials, and consumer goods while exports grew by 6 percent. The rapid adjustment of trade exacted a stiff price from the domestic economy, resulting in disruptions in production and consumer supplies, sharp cutbacks in investment, and an overall slowdown in growth.[34]

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[32] Journal of Commerce, Nov. 3, 1983.

[33] *Ibid.*

[34] East Germany publishes no balance-of-payments statistics other than totals for exports to and imports from nonsocialist countries. While the overall balance of trade announced by East Germany appears consistent with BIS financial statistics, the trends in exports and imports are inconsistent with Western partner trade data. The totals for exports, imports, other current account items, and capital flows presented in the text and Table 9 are the authors' estimates based upon official OECD trade statistics, official intra-German trade statistical, BIS financial statistics, and various studies published by Wharton Econometric Forecasting Associates and the West German Institute for Economic Research (DIW). See "East German Trade Performance in

Continued

The East Germans improved their cash flow by pressing suppliers for longer credit maturities, reselling for cash commodities obtained on trade credit or through barter arrangements, and shifting Western imports into intra-German trade.[35] East Germany's purchases from West Germany rose from $2.5 billion in 1981 to $2.9 billion in 1982 while imports from other OECD countries fell from $2.4 billion to $1.7 billion. This shift presumably occurred because the East Germans had easier access to trade credits in West Germany, including the swing credit, and because East Germany can more readily export to West Germany where its goods enter duty-free.[36] The East Germans also gained by building up their trade surplus with OECD countries other than West Germany because—unlike surpluses earned in intra-German trade—a surplus earned with other Western partners yields cash that can be used to service hard currency debts.

TABLE 9. EAST GERMANY: FINANCING REQUIREMENTS, 1982–84

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Financing requirement	3,981	3,090	2,820
Current account balance	1,269	1,030	780
Trade balance	1,509	1,000	600
Exports	7,172	7,500	7,900
Imports	5,663	6,500	7,300
Net interest	−1,190	−820	−820
Other net invisibles	950	850	1,000
Repayments of medium- and long-term debt	3,000	2,750	2,300
Repayments of short-term debt	[3] 2,250	1,370	1,300
Borrowing sources	3,510	4,150	(4)
Medium- and long-term credits	2,130	2,800	(4)
Short-term credits	1,380	1,350	(4)
Net errors and omissions	196	240	(4)
Change in reserves	−275	900	(4)

[1] Preliminary estimate.

[2] Projected.

[3] Includes net change in supplier credits.

[4] Not available.

Sources: Official East German foreign trade statistics; Frankfurter Allgemeine, June 29, 1983, p. 2; Business Eastern Europe, Feb. 11, 1983, p. 48; German Institute for Economic Research, Wochenbericht, Sept. 10, 1982, and Feb. 2, 1983; Bank for International Settlements quarterly reports on international bank lending and semiannual reports on the maturity structure of international bank lending.

The payments surplus and tighter cash management reversed the outflow of reserves, and by the end of 1982 East Germany's assets in Western banks had recovered to $1.9 billion. The East Germans may also have improved their reserve position as reported in BIS statistics by borrowing short-term credits from banks not included in the BIS survey (for example, Middle Eastern banks) and redepositing the funds in Western banks. In addition, East Berlin drew on its sizable stock of unused credit commitments with

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1982" published by Wharton Econometrics Forecasting Associates in Centrally Planned Economies Current Analysis, vol III, No. 27, Apr. 15, 1983, for a discussion of the inconsistencies in East German trade statistics.

[35] East European Market, Apr. 1, 1983, p. 7. Business Eastern Europe, Sept. 17, 1982, p. 300.

[36] Since intra-German trade is a clearing arrangement, the proceeds of exports to Western Germany can be used only to purchase West German goods or to service obligations to West Germany.

Western banks. BIS statistics show that East Germany may have mobilized as much as $560 million—nearly 20 percent of its gross borrowings from commercial banks in 1982—through drawdowns of previously committed credit lines.

A. Performance in 1983

Another current account surplus, increased trade financing and special financial credits from West Germany, as well as new government-backed trade loans from other Western countries strengthened East Germany's financial position in 1983. Although faced with debt repayments of more than $4 billion, the East Germans met their obligations, reduced their debt to Western banks by $650 million, and built up reserves by an estimated $1.3 billion to a record $3.2 billion. In contrast to 1982, the regime was able to run a payments surplus and reduce its debt while increasing imports from the West.

East Germany's trade surplus slipped to an estimated $1 billion in 1983 as a result of a 15-percent increase in imports and a 4-percent gain in exports. The current account surplus declined to $1 billion. Even with smaller surpluses, the East Germans continued to maximize cash receipts by reselling oil, silver, and other commodities obtained through barter arrangements with LDCs and on clearing account from West Germany.[37]

As in 1982, East Germany pursued a differentiated trade policy between West Germany and the other OECD countries in order to make maximum use of available import financing and to build up a convertible currency surplus. Capitalizing on West German trade credit facilities, East Germany boosted imports from West Germany by more than 30 percent during the first half of 1983 over the same period of 1982 and increased its net debt to West Germany by roughly $300 million. During the same period, the East Germans ran a $300 million surplus with the rest of the OECD.[38] The pattern shifted in the second half of the year when more credits became available from other Western sources. East Berlin ran a $250 million surplus in inner-German trade through a slowdown in imports and a boost in exports, and paid back most of the increase in indebtedness to West Germany from earlier in the year. While moving into surplus with West Germany, the East Germans ran a surplus of less than $50 million with the rest of the OECD.[39]

In addition to trade financing, West Germany helped ease East Germany's liquidity problems by granting a $400 million government-guaranteed financial credit. According to the Wall Street Journal, East Germany asked in late 1981 for official West German help in raising nearly $2 billion from Western banks. The West Germans held back, apparently because East Berlin refused to make concessions on political issues. In mid-1983, however, Bonn agreed to guarantee a syndicated loan from West German commercial banks without explicit concessions by the East Germans. Unlike other intra-German credits, the $400 million loan was in convertible currency and not tied to trade; thus, East Berlin could use the proceeds to cover debt service payments to non-German creditors. By demonstrating West Germany's financial umbrella, the loan apparently encouraged Western bankers to revive lending to East Berlin and improved the terms East Germany could obtain on new credits.

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[37] Financial Times, Nov. 14, 1983.

[38] West German Ministry of Economics press release on inner-German trade, Aug. 24, 1983.

[39] Business Eastern Europe, Dec. 16, 1983, p 400; May 6, 1983, p 144; Apr. 22, 1983, p 128; Nov. 11, 1983, p 360. Die Presse, Dec. 14, 1982, p 9.

Bonn's readiness to provide financial support to the East Germans apparently did not end with the $400 million loan. By late 1983, the West German press was reporting that discussions were under way for a second $350-400 million loan. West German political leaders stated, however, that East Berlin would have to meet West German demands on political issues before Bonn could guarantee new large loans.[40]

Outlook.—Even though the likelihood of an East German rescheduling has diminished, the country will face a tight financial squeeze over the next few years. Repayments of medium- and long-term debt in 1984-85 will fall from the 1982-83 level, but at roughly $2 billion annually they will remain substantial. The East Germans must also roll over a large short-term debt. East Germany undoubtedly is anxious to raise more medium-term credits—including a return to the syndicated loan market—in order to refurbish its credit rating and to stretch out the maturity structure of its debt.

East Berlin's decision to revive imports in 1983 and to press Western bankers and governments for new loans show that East German planners still see trade with the West as an important element of their economic strategy. The regime likely will hold to a more cautious borrowing strategy than in the late 1970s. East Germany, however, seems unlikely to follow Bulgaria, Czechoslovakia, and Romania in maintaining a very tight lid on imports to pay off its debts. Nonetheless, East Germany can no longer rely on a strategy that attained rapid economic growth and improvements in living standards in the 1970s through large resource transfers from the West.

XI. Yugoslavia

Yugoslavia's financial crisis stemmed as much from failure to reduce the current account deficit and poor cash management in the country's banking system as from reduced Western bank lending. Western bank exposure with Yugoslavia fell by only 6 percent, or $650 million, in 1982—the smallest percentage reduction for any East European country (excluding Poland). Nonetheless, by the end of the year Yugoslavia had no prospect of meeting its 1983 obligations without Western financial help.

Belgrade failed to cut its current account deficit in 1982 to its target of $500 million and instead ran a deficit of $1.4 billion because of poor export performance, falling worker remittances, weak tourism receipts, and high interest costs. Yugoslavia also suffered a $400 million outflow on the capital account, resulting mainly from reductions in short-term debt as Western bankers grew increasingly worried about the solvency of some Yugoslav regional banks.

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[40] Business Eastern Europe, Dec. 9, 1983, p. 392.

Concern about Yugoslavia's prospects prevented Belgrade from meeting its target for medium- and long-term borrowing despite conclusion of a $200 million syndicated loan from Western banks late in the year. Disbursement of some $600 million in IMF credits was inadequate to offset the shortfall in current earnings and capital flows, and Yugoslavia was forced to draw down its reserves by more than $1 billion.[41]

Almost all of the decline in reserves came from the official foreign exchange assets of the Yugoslav National Bank. Belgrade decreed emergency foreign exchange controls in May 1982, requiring regional banks and enterprises to contribute to a liquidity fund with which the National Bank was to pay off arrearages of overextended commercial banks and to build up its reserves. The banks and enterprises failed to comply and, as a result, the National Bank lost reserves in a futile attempt to clear up overdue payments of the commercial banks. Belgrade imposed additional foreign exchange controls in October in an effort to save its dwindling reserves. The National Bank's assets, however, were inadequate to cover the overdue payments of commercial banks.

TABLE 10. YUGOSLAVIA: FINANCING REQUIREMENTS, 1982–84

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Financing requirement	4,009	3,100	2,600
Current account balance	–1,420	–100	500
Trade balance	–3,781	–1,800	–1,600
Exports	5,854	6,300	6,800
Imports	9,635	8,100	8,400
Net interest	–1,733	–1,640	–1,500
Other services, net	2,843	2,565	2,600
Remittances, net	1,251	975	1,000
Repayments of medium- and long-term debt	–1,900	–2,500	–3,000
Repayments of short-term debt, net	–506	–600	....
Credits extended, net	–183	–100	–100
Borrowing sources	2,629	3,925	3,750
IMF	610	600	500
IBRD	125	400	500
Government loans	500	900	1,050
Financial credits	([3])	400	600
Export credits	([3])	500	400
Banks	600	1,600	1,200
New loans	([3])	600	....
Medium- and long-term rollover	([3])	1,000	1,200
Other	794	425	500
Net errors and omissions	368	–550	....
Change in reserves	–1,012	275	1,150

[1] Preliminary estimate.
[2] Projected.
[3] Not available.

Sources: Wharton Econometric Forecasting Associates, "Yugoslav Foreign Trade Performance and External Payments Situation Through April 1983,"; Centrally Planned Economies Current Analysis, vol. III, No. 48–49, June 30, 1983, and "Yugoslav Foreign Trade Performance and Balance of Payments Situation During the First Half of 1983," Centrally Planned Economies Current Analysis, vol. III, No. 52, Oct. 28, 1983; IMF International; Financial Statistics; and Wharton Econometrics Forecasting Associates, Balance of Payments and Debt Report, Dec. 8, 1983.

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[41] Wharton Econometric Forecasting Associates, Centrally Planned Economies Current Analysis, June 30, 1983.

A. Performance in 1983

By early 1983, Yugoslavia's creditors recognized that the country could not meet its debt obligations. The IMF, which was shepherding Yugoslavia through the last year of a three-year stabilization program, pressed Western governments and banks to adopt a rescue plan that would refinance maturing medium- and long-term credits, halt the erosion of short-term debt, and ensure enough new credits to rebuild Yugoslavia's depleted reserves. The IMF hoped that the refinancing package, coupled with improvement in Yugoslavia's current account, would produce a strong enough revival in commercial lending so that Yugoslavia would not require more help in 1984. The plan eventually grew into a complicated package worth more than $5 billion in new credits and refinancing:

—Western governments pledged nearly $1.4 billion in export credits, financial loans, and rollovers of maturing officially-backed loans;
—Western banks refinanced $1.0 billion in medium-term loans for 6 years with a 3-year grace period, kept in place $900 million in short-term credits, and extended $600 million of new untied loans;
—the IMF provided the last $620 million available under the $2.1 billion standby credit extended in 1981, while the World Bank chipped in nearly $400 million in project credits and a structural adjustment loan; and
—the Bank for International Settlements contributed $500 million in short-term bridge loans.[42]

Completion of the rescue package proved to be a lengthy process. The most serious obstacle was Belgrade's resistance to banker demands for the National Bank and government to assume responsibility for the debt and in effect recentralize the financial system. After stormy debate in the Federal Assembly, Belgrade agreed to guarantee credits borrowed by Yugoslav banks under the refinancing plan and passed legislation strengthening the National Bank's role in debt management. These actions paved the way for completion of the bank package in September. Delays in negotiating bilateral agreements with donor governments and the reluctance of Yugoslav firms to draw the trade credits prevented disbursement of the entire $1.4 billion pledged by official creditors.[43]

Yugoslavia achieved a much greater improvement in its trade and current account in 1983 than expected. Yugoslav data show that Belgrade cut its trade deficit from $3.8 billion in 1982 to $1.6 billion in 1983 as a result of both growth in exports and sharp cuts in imports. The delayed disbursement of credits in the refinancing package contributed to the reduction in imports, but the improvement in trade performance also resulted from the roughly 60-percent devaluation of the dinar demanded by the IMF and Yugoslavia's success in redirecting exports from CEMA to convertible currency markets. Because of the reduced trade deficit and a revival of tourism earnings, Yugoslavia moved its current account deficit from $1.4 billion deficit in 1982 to an estimated $100 million surplus in 1983.[44]

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[42] Wharton Econometric Forecasting Associates, Centrally Planned Economies Current Analysis, vol. III, No. 48–49, June 30, 1983.

[43] Wall Street Journal, June 10, 1983.

B. Outlook for 1984

Despite the 1983 refinancing package and improved current account, Yugoslavia told its creditors that it would need more help in 1984. Belgrade faces roughly $3 billion in repayments on medium- and long-term debt. The Yugoslavs project a 20-percent growth in exports and a current account surplus of $800 million; the IMF is more cautious, anticipating a current account surplus of perhaps $500 million.[45] In either case, Yugoslavia must roll over a large amount of maturing loans, and it does not seem able to return to normal borrowing on its own. Moreover, we estimate that foreign exchange reserves recovered by only $275 million from the end-1982 level, leaving Belgrade little scope for covering its financial gap from cash holdings.[46]

According to press reports, Western banks have agreed in principle to refinance about $1.2 billion in maturing medium- and long-term loans provided Western governments agree to refinance $600 million. The remaining $1.2 billion in maturing credits include supplier credits, as well as loans from the IMF, World Bank, and other official agencies. The IMF will provide about $500 million if agreement is reached on a new stabilization program.[47] Completion of the agreement, however, has been delayed by Belgrade's resistance to Fund demands for increases in domestic interest rates and removal of price controls. The Yugoslavs can also draw some $400 million in unused government-backed trade credits pledged in the 1982 financing package.[48]

C. Longer Term Prospects

Yugoslavia, the IMF, and commercial bankers hope that Belgrade will not require more financial rescue packages after 1984. Even with an increasing current account surplus, however, Yugoslavia will probably have larger borrowing needs than it can cover in the market and will require additional debt relief.

Yugoslavia, nevertheless, can affect a financial recovery provided it regains the confidence of Western bankers by attacking systemic problems that underlie the economy's bias toward inflation and reliance on Western imports. Belgrade's administrative controls and the IMF's prescribed tight monetary policy have not slowed inflation which was rising at a rate of more than 50 percent annually by late 1983. Belgrade must work harder to restrain increases in wages, prices, and domestic credit and continue devaluing the dinar if it is to sustain the 1983 improvement in the current account. But this will require gains in efficiency and competitiveness than can be achieved only through systemic reform. That would involve abandoning policies that have given primacy to regional interests over integrative market forces. In addition, policies that misallocate investment resources have been used to protect jobs by shoring up money-losing enterprises and to subordinate efficiency to political objectives. An efficient national foreign exchange market is needed to ensure that all producers pay the true cost of foreign exchange and those best able to use foreign resources receive hard currency.

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[44] Financial Times, Dec. 7, 1983.

[45] The Economist, Dec. 10, 1983 and Financial Times, Dec. 7, 1983.

[46] International Financial Statistics, February 1984.

[47] Financial Times, Dec. 5, 1983.

[48] Financial Times, Dec. 7, 1983, Wall Street Journal, Jan. 13, 1984, and Journal of Commerce, Nov. 23, 1983.

Despite professions of good intentions from officials, Belgrade's capacity to overhaul its economy is suspect. Needed adjustment policies and structural reforms may impose a higher price than society is willing to pay. The population is already grumbling about falling living standards, and resistance could intensify as consumption levels decline further. Sacrifices are not distributed equally among regions and nationalities, making it difficult for the collective leadership to reach a consensus on policy. Moreover, greater reliance on market forces challenges official ideology and threatens the prerogatives of powerful vested interests in the republics.

XII. CZECHOSLOVAKIA

The cutback in bank lending produced some minor liquidity problems for Czechoslovakia in early 1982 and accelerated the regime's plans for curbing hard currency imports and paying off its debt. Between January and September of 1982, Prague's deposits in Western banks fell by roughly 25 percent to $670 million, the lowest level since 1978. According to Business Eastern Europe, Czechoslovak foreign trade enterprises tried to ease cash-flow problems by pressing harder for countertrade deals and for one- and two-year credits for raw materials normally purchased for cash. Prague's planners also responded by imposing an 11-percent cut in imports from the West. The adoption of administrative measures to constrict imports flowed from the regime's decision that Czechoslovakia would not "live on credit" as well as from the 7-percent decline if hard currency exports.[49] With shrinking export earnings, planners had to cut purchases to meet the leadership's goal of reducing external indebtedness. Czechoslovakia thus moved its current account to a $175 million surplus in 1982 compared with a $79 million deficit the year before.

TABLE 11.—CZECHOSLOVAKIA: FINANCING REQUIREMENTS, 1982–84

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Financing requirement	1,455	655	615
Current account balance	175	565	600
Trade balance	485	770	775
Exports	4,099	4,142	4,275
Imports	3,614	3,372	3,500
Net interest	−370	−275	−255
Other net invisibles	60	70	80
Repayments of medium- and long-term debt	360	435	400

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[49] Journal of Commerce, Jan. 5, 1983.

TABLE 11.—CZECHOSLOVAKIA: FINANCING REQUIREMENTS, 1982–84—Continued

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Repayments of short-term debt [3]	1,270	785	815
Borrowing sources	1,105	1,200	(4)
Medium- and long-term credits	355	500	(4)
Short-term credits	750	700	(4)
Net errors and omissions	–13	0	(4)
Change in reserves	–363	450	(4)

[1] Preliminary estimate.

[2] Projected.

[3] Includes estimated net change in supplier credits.

[4] Not available.

Sources: Official Czechoslovak foreign trade statistics; Wharton Econometrics Forecasting Associates, "Centrally Planned Economies Current Analysis," Vol. III, No. 26, April 13, 1983; Wharton Econometrics Forecasting Associates, "Balance of Payments and Debt Report," December 8, 1983; and BIS statistics.

A. Performance in 1983

Czechoslovakia has announced that it plans to maintain its cautious policy on hard currency imports and to continue paying off its debt over the next several years.[50] The 1983 foreign trade plan envisioned a modest increase in both hard currency exports and imports, but poor export performance apparently led Prague to keep a tight rein on imports. Hard currency exports grew by only 1 percent while imports fell by nearly 7 percent. The current account surplus rose to $565 million and will probably be on the order of $600 million in 1984 and 1985. This presumes Prague holds to its plan of keeping the growth of imports in 1984–85 in line with the growth of exports.

Czechoslovakia seems to face few borrowing problems, and its liquidity has improved. BIS data show that borrowings from Western banks declined by only $100 million during the first three quarters of 1983 after falling nearly $500 million in 1982. The Czechoslovaks have used their payments surplus to add more than $400 million to reserves in Western banks. In mid-1983 Czechoslovakia raised a $50 million medium-term loan from Western banks.[51] Prague's senior banker described the small credit as a "symbolic question of getting back on the Euromarkets" after the 1981–82 credit squeeze. The Czechoslovaks apparently balked at emulating Hungary's example of first disclosing more information on their debt and balance of payments in return for a larger loan.

B. Outlook

The key question in Czechoslovakia's hard currency trade and payments outlook is whether the economy can afford a strategy that links hard currency imports to the growth of exports and that will not permit increased borrowing in order to modernize industry. Prague's long-held financial conservatism has contributed to the technological decline of Czechoslovakia's industry and the stagnation of the overall economy. Even with economic recovery in the West, inherent weaknesses will undermine export performance, permitting little if any growth in real imports. Prague continues to focus its export strategy on heavy industrial goods, which are falling ever further behind world standards, while neglecting light industry where it could be more competitive. A judiciously planned pickup in investment—using Western resources—could help modernize key industrial sectors and jolt the economy out of its doldrums. Fear of the political consequences of reliance on Western credits, however, and general satisfaction with its financial conservatism will most likely continue to dissuade the Husak regime from adopting a more aggressive import strategy.

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[50] Financial Times, Oct. 25, 1983.

[51] Wall Street Journal, July 21, 1983.

XIII. BULGARIA

Sofia's relatively low debt and lack of dependence on the West paid off during the 1982 bank freeze of Eastern Europe. Creditors seemed less anxious to reduce their exposure to Bulgaria than to the rest of Eastern Europe. Although bank claims dropped by some $320 million during the year, the decline probably reflected Sofia's policies as much as banks' efforts to reduce exposure. After a dip in its deposits in Western banks in the first half of the year, Sofia managed an increase for the entire year.[52] Not only was the bank pullout less severe for Bulgaria, but a minimal financing requirement left it better able to adjust. Its low debt and comfortable maturity structure meant that repayments were not large, and, thanks to its conservative trade policy of recent years, Sofia earned another surplus on the hard currency current account without a large reduction in imports.

TABLE 12.—BULGARIA: FINANCING REQUIREMENTS, 1982–84

[In millions of U.S. dollars]

	1982	1983 [1]	1984 [2]
Financing requirement	737	496	255
Current account balance	678	629	730
Trade balance	623	464	500
Exports	3,195	2,879	3,000
Imports	2,572	2,415	2,500
Net interest	−215	−125	−90
Other net invisibles	270	290	320
Repayments of medium- and long-term debt	−640	−510	−525
Repayments of short-term debt [3]	−775	−615	−460
Borrowing sources	875	650	([4])
Medium- and long-term credits	275	200	([4])
Short-term credits	600	450	([4])
Net errors and omissions	+36	−54	([4])
Change in reserves	174	100	([4])

[1] Preliminary estimate.

[2] Projected.

[3] Includes net change in outstanding supplier credits.

[4] Not available.

Sources: Official Bulgarian foreign trade statistics; Wharton Econometric Forecasting Associates, "Balance of Payments and Debt Report," December 9, 1983; and BIS statistics.

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[52] Bank for International Settlements.

A. Performance in 1983

Bulgaria entered 1983 in the strongest financial position of any East European country. Several consecutive years of current account surpluses enabled Sofia to reduce its gross debt to less than $3 billion at the end of 1982 and to build up reserves of $1 billion, enough to cover four months' worth of imports. Creditors continued to give high marks for Sofia's financial conservatism.

Bulgaria's financial strength allows it a range of options in managing its hard currency accounts. It could maintain its policy of holding down imports and reducing its debt even further. Or Sofia could use the cushion provided by the conservatism of recent years to pursue an expansion of hard currency imports. Some press reports suggested that Bulgaria was interested in pursuing the latter option.[53] According to these reports, Sofia was actively negotiating for Western equipment and technology—apparently the only East European country showing much interest.

Trade performance in 1983, however, shows that Sofia is still limiting hard currency imports. Imports from nonsocialist countries were down 6-percent from the 1982 level. The reduction probably can be explained by the 10-percent drop in exports to the West and Sofia's intention to maintain healthy trade and current account surpluses. Bulgaria ran a trade surplus of $464 million and a current account surplus of $629 million.

B. Outlook

Plans for modest expansion of trade with the West may have greater impact down the road, particularly once economic recovery in the West revives Bulgaria's exports. Because of its good standing with bankers, Sofia should encounter little trouble in financing a larger volume of imports. Nonetheless, we anticipate that the regime will keep a close eye on its balance-of-payments performance and will not allow a repetition of the comparatively large deficits that occurred in the mid-1970s.

XIV. IMPROVING CREDITOR ATTITUDES?

The panic that gripped Eastern Europe's creditors in 1982 gradually receded during 1983. Western bank exposure fell by an additional $2.5 billion in the first quarter of 1983, but in the second and third quarters the decline averaged $850 million (only $200 million excluding Poland). Market observers pointed to the success of Hungary and Czechoslovakia in raising syndicated loans as evidence that restrictions on lending were beginning to ease. West Germany's government-guaranteed loan to East Germany apparently reinforced bankers' assessments of East Berlin's creditworthiness. In contrast to the bad publicity about Eastern Europe in 1981–82, the financial press began reporting on the revival of trade financing for the region. Indeed, credit ratings published by Euromoney and the Institutional Investor in late 1983 showed the first improvement in Eastern Europe's standing since 1979.

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[53] Business Eastern Europe, May 6, 1983 and The Economist, Jan. 8, 1984.

Although still cautious about new lending, bankers seem a little more relaxed about the region's financial situation because their worst fears proved exaggerated.[54] Most countries have shown a greater capacity than expected to make adjustments, at least in the short-run. Poland did not default or repudiate its debt and has kept payments current on its rescheduling agreements with the banks; Romania and Yugoslavia have made progress in addressing balance-of-payments problems and in normalizing relations with their creditors. Other heavily indebted countries--notably Hungary and East Germany—survived the 1982 credit crunch without rescheduling, an achievement that helped revive creditor confidence in these countries.

Statistical indicators confirm some improvement in the financial position for most East European countries in 1983 (Table 13). An increase in reserves and a reduction in debt maturing within one year improved the liquidity of all countries except Poland. Lower debt repayments and falling interest rates improved the debt service ratios for nearly all countries.

TABLE 13.—EASTERN EUROPE: SELECTED FINANCIAL INDICATORS

	Proportion of bank loans with less than 1 year maturity (percent)					Reserves as a share debt maturing in 1 year (percent)				
	1979 [1]	1980 [1]	1981 [1]	1982 [1]	1983 [2]	1979 [1]	1980 [1]	1981 [1]	1982 [1]	1983 [3]
Eastern Europe	39.9	36.3	37.0	34.0	33.6	28.8	29.0	28.1	23.1	27.0
Bulgaria	41.1	36.3	48.1	51.7	52.8	31.0	53.5	59.4	90.1	123.2
Czechoslovakia	47.1	43.1	37.6	31.2	32.8	46.8	65.3	67.8	55.8	95.6
East Germany	42.7	38.6	42.6	39.0	38.8	46.7	45.2	42.3	48.2	68.6
Hungary	47.4	42.9	40.4	33.2	36.0	27.2	34.0	25.0	29.0	31.7
Poland	39.1	33.1	36.1	32.8	29.3	14.7	7.5	9.7	9.0	7.2
Romania	50.5	42.7	35.3	38.9	32.8	9.6	9.4	8.9	9.5	16.7
Yugoslavia	22.6	28.1	28.4	26.7	30.0	46.3	36.9	38.3	18.0	23.8

	Undisbursed bank commitments as a share of outstanding debt (percent)					Debt service ratios (percent) [4]				
	1979 [1]	1980 [1]	1981 [1]	1982 [1]	1983 [2]	1979	1980	1981	1982	1983
Eastern Europe	16.5	17.4	11.7	8.4	7.5	36.7	39.9	48.7	56.7	61.0
Bulgaria	8.4	16.7	24.5	15.5	18.3	33.7	32.5	33.9	26.9	22.1
Czechoslovakia	9.7	8.3	6.7	10.4	9.7	20.6	21.8	20.1	19.4	17.8
East Germany	16.5	15.2	16.2	13.3	11.1	44.6	43.9	51.6	53.2	45.9
Hungary	5.2	8.4	4.6	7.2	5.5	33.1	30.9	32.7	33.0	30.7
Poland	24.6	23.9	11.8	4.8	4.3	86.0	97.1	174.6	214.6	245.7
Romania	18.3	18.2	9.4	9.8	9.0	21.1	25.6	27.4	45.3	31.5
Yugoslavia[5]	23.8	19.0	11.9	7.5	6.7	20.2	22.8	26.4	28.4	33.8

[1] At yearend.
[2] At midyear.
[3] Preliminary estimate at yearend.
[4] Repayments of medium- and long-term debt and interest payments on gross debt a share of current account earnings.
[5] Reserves held by the National Bank of Yugoslavia.

Source: Bank for International Settlements, International Financial Statistics, Wharton Econometric Forecasting Associates, Centrally Planned Economies Service.

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[54] Montagnon, Peter. "Eastern Europe: Is it Coming Back to the Market?" The Banker, October 1983, pp 41–44.

The emergence of LDC debt problems in mid-1982 may have complicated Eastern Europe's borrowing woes, but it also put the region's difficulties in a more balanced perspective. Eastern Europe's problems no longer appear unique nor even extraordinarily severe, Poland excepted. Concern over the threat to the world's financial system from overextended borrowers demonstrates that both debtors and creditors bear responsibility for resolving financial problems. In particular, the involvement of the BIS and IMF in Hungary's and Yugoslavia's crises has encouraged—and to some extent compelled—continued banker involvement with these countries.

A. Longer Term Outlook

The debt crisis of 1981-82 has changed bankers' long-term thinking about Eastern Europe. The banks can no longer point to Eastern Europe's financial conservatism and unblemished payments record, and they have learned that they cannot trust in Soviet financial support as adquate justification for lending to the region. Instead of making blanket judgments about the area's creditworthiness, bankers are likely to draw sharper distinctions among the countries on the basis of economic policy, performance, and prospects.[55]

Continuing unease among bankers about foreign lending and closer government supervision of commercial bank exposure will slow the return of Eastern Europe and the LDC's to Western financial markets, although both could benefit if Western countries seek to support their own exports by boosting credits through guarantee and insurance programs. Even when they return, comparisons will be made between the two groups of countries on the extent and success of adjustment programs. While Eastern Europe may look better in the short run because of the dramatic trade adjustments made in 1981-82, its longer run economic prospects probably are bleaker.

Political developments also could influence borrowing prospects. Any further cooling in the East-West political climate or outbreaks of unrest or violence could further undermine creditor confidence. Threats to political stability could result from popular reaction to the pinch of austerity measures or from struggles over succession, and problems in one country could spill over and poison lenders' attitudes about the whole region.

As a prerequisite for increased lending, bankers will likely look for evidence that the East Europeans are making structural changes to boost export performance. Many creditors regard draconian import reductions as a short-run expedient with little positive impact on long-term creditworthiness. Some bankers consider the Western recession as only partly responsible for disappointing export performance in recent years, and they remain skeptical that the East Europeans will or can do as much as financially troubled LDC's to correct their fundamental problems. As a result, they are putting more weight on IMF membership, while urging the East

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[55] *Ibid.*

Europeans to provide more complete economic and financial information.

Even when providing new loans, many Western bankers will likely keep Eastern Europe on a short leash. The days of granting large untied credits at long maturities and low interest spreads are gone. Major Eurodollar syndications will be much rarer than in the late 1970s; a far greater share of lending will be short-term and trade-related. Commercial banks will likely insist on more Western government backing for their loans or demand security from the borrowers, including gold collateral and offsetting deposits. The cost of credit will be higher than in the late 1970s, and the debt maturity structure will remain unfavorable for most countries.

XV. Implications for Import Capacity

Eastern Europe's hopes for easing restrictions on imports depend upon whether the region can reduce—and eventually reverse—the net outflow of funds suffered since 1981. Projecting financing flows for future years is uncertain because of factors affecting both the supply of and demand for credit. It is not easy to quantify the impact of IMF stabilization programs, Western rescue packages, and developments in international financial markets on the willingness of creditors to lend. It is difficult, in addition, to generalize about the prospects for new borrowings by the region as a whole because lenders are likely to differentiate among these countries more than in the past in making decisions about new credits, and some regimes may be unwilling to make full use of available borrowing capacity.

Some improvement in borrowing conditions and a pickup in Western demand for East European exports should enable the East Europeans to ease their restraints on imports somewhat. Gains in import capacity probably will be achieved in 1984–85, but imports in 1985 will not return to the 1980 record level unless the revival of lending is particularly strong. Even if lending revives, some countries may be unwilling to expand imports to capacity and may opt instead to continue reducing hard currency debt or building up reserves. While regimes currently place high priority on continuing to run trade and current account surpluses, they may alter policies if more credits become available. Pressures to make full use of available import capacity will be intense because most economies need more Western inputs.

In the short run, Eastern Europe's import priorities will likely remain those of the past two years. Most regimes will give preference to goods needed for consumption and current production. Purchases of grain and food products will fluctuate with agricultural performance. These economies, however, will require a revival of investment using Western resources to lay the foundation for long-term economic growth, and this may have some greater impact down the road on purchases of machinery and equipment.

To raise imports significantly, the East Europeans need robust gains in hard currency sales. Their ability to sustain an export drive is open to question.

—Exports suffer from long-standing problems of quality and marketing, and tinkering with trade bureaucracies is unlikely to infuse more export-orientation;

—Cutbacks in imports of capital goods have probably widened the technological gap between the West and Eastern Europe;

—Many of Eastern Europe's traditional exports face increasingly stiff competition from LDCs and growing protectionist sentiment in Western Europe;

—The East Europeans are unlikely to repeat the sizable gains in exports of raw materials and petroleum products achieved in 1979-80 because of softer prices and cutbacks in deliveries of Soviet oil;

—Cash shortages are forcing OPEC and other developing countries to slash imports, possibly leading to a greater share of East European sales to these countries through bilateral clearing arrangements and not for cash;

—Efforts to expand exports through countertrade deals with Western trading partners have limited prospect for success due to their resistance to East European barter goods.

XVI. Legacy of the Crisis: Lessons and Perspectives

The prospect of slow export growth and at best small inflows of credit mean that financial problems will continue to beset nearly all the East European countries. In the near term, Poland—and very likely Yugoslavia—simply cannot generate enough debt servicing capacity on their own to meet obligations and will continue to need debt relief. The outlook for other countries may be less bleak, but renewed reductions in credit availability could expand the number of countries needing rescheduling or Western aid. Even if the likelihood of more reschedulings diminishes, limited import capacity will continue to hobble economic performance. Most regimes will have to restrain consumption and investment in order to lower demand for imports and free up goods for export. Within these constraints, pressure will build to produce more output with fewer inputs. This will point up the necessity of attacking the systemic flaws that have contributed to low productivity.

Continuing serious financial problems for some countries and, at best, slow improvement for the rest implies that the leadership will face difficult decisions in the next few years. The problems are not new ones, but are now more severe than in the past. Muddling through—tinkering, temporizing, and relying on help from the USSR and the West—has become less of an option. More than ever, the East European countries will be forced to rely on their own resources and on the ability of their economic managers and systems to adjust. Continuing financial and related problems will influence East European policy on a wide range of issues:

—relations with the USSR, the West, and each other;

—allocation of resources to investment, consumption, and defense; and

—economic reform—along with its political and ideological implications.

While East European officials instinctively blame the West for their problems, their own shortcomings at least made them more vulnerable to the credit cutoff. They must be disappointed, for example, with the results of their decision in the early 1970s to expand trade with the West. The import boom did not lead to a sustained improvement in the growth rates of their economies, implying either that the imports did not help or that their benefits were swamped by other problems. Moreover, the imported technology and equipment failed to generate enough exports to repay the loans.

The regimes are likely to conclude from their experiences that caution should guide their economic relations with the West for some time. Thus, while creditors' attitudes indicate that the supply of financing will be tight, demand by the East European debtors also may be constrained by a new conservatism. Bulgaria, Romania, and Czechoslovakia have stated or behave as if they want to pay off their debts to the West. At a minimum, other East Europeans probably will try to be more certain that they can repay loans and will build more caution into their forecasts for the Western economies, carefully considering the potential impact on their external accounts.

On the other hand, the East Europeans may conclude that they now need the West more than ever. Indeed, most still seem anxious at least to maintain their economic ties with the West.[56] The fundamental economic problems that led them to seek Western trade and credits a decade ago are now even more pressing. Dwindling economic resources—aggravated by Moscow's cuts—place a greater premium on efficiency. With the East's relatively weak technology and research base, the West remains the preferred source of equipment and technology to boost productivity.

The increased need for efficiency and more rational use of scarce resources is likely to give fresh impetus to reform advocacy. The capital inflows of the 1970s—together with Soviet largesse—allowed the East Europeans to get along without making fundamental changes in their economies. Without new loans, and with prospects for continuing slow or negative growth, systemic reform has become more urgent. The priority of boosting sales in hard currency markets means that East European production must be of higher quality and more flexible in reacting to changing tastes and conditions. This calls for decentralization at least in the management and operation of the external sectors. The problem is that, as the Hungarian experience shows, reforms take a long time to implement and even longer to pay off. Moreover, the present tight payments situation requires quick results, which would be difficult to achieve during a period of structural transition. Reform, furthermore, can be politically unsettling in that it threatens the privileges of entrenched bureaucracies and challenges the ideological underpinnings of these regimes.

Finally, the prospect of stringency in economic relations with the West and the continued need for sharp domestic adjustments to the credit squeeze are likely to heighten tensions. The prospect of lower capital inflows or of outflows will require reduced imports and increased exports, both of which will take resources out of the

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[56] "Outlook Optimistic for Trade with Eastern Europe in 1984." Business Eastern Europe, Dec. 23, 1983, p. 401.

domestic economies and depress living standards.

EASTERN EUROPE: GROSS AND NET HARD CURRENCY DEBT AT YEAREND

[In millions of U.S. dollars]

	1980	1981	1982	1983[1]
Eastern Europe:				
Gross debt	83,477	85,779	80,633	81,850
Commercial debt	61,710	60,402	53,291	48,350
Government-backed debt	18,310	20,330	20,683	25,400
IMF/IBRD/BIS	3,457	4,635	6,246	7,700
CEMA banks		412	413	400
Reserves	10,181	10,033	8,321	9,685
Net debt	73,296	75,766	72,312	72,165
Bulgaria:				
Gross debt	3,536	3,065	2,757	2,500
Commercial debt	3,201	2,695	2,292	2,000
Government-backed debt	335	370	465	500
Reserves	779	840	1,014	1,125
Net debt	2,757	2,225	1,743	1,375
Czechoslovakia:				
Gross debt	4,926	4,508	4,028	3,900
Commercial debt	4,066	3,703	3,093	2,900
Government-backed debt	860	805	935	1,000
Reserves	1,256	1,105	742	1,160
Net debt	3,670	3,403	3,286	2,740
East Germany:				
Gross debt	14,098	14,863	13,039	12,300
Commercial debt	11,253	11,583	9,489	8,500
Government-backed debt	2,845	3,280	3,550	3,800
Reserves	2,506	2,596	2,321	3,200
Net debt	11,592	12,267	10,718	9,100
Hungary:				
Gross debt	9,090	8,699	7,715	7,650
Commercial debt	8,790	8,334	6,955	6,450
Government-backed debt	300	365	525	600
IMF/IBRD/BIS			235	600
Reserves	2,090	1,652	1,154	900
Net debt	7,000	7,047	6,561	6,750
Poland:				
Gross debt	25,000	25,453	24,840	27,500
Commercial debt	14,900	14,188	13,660	12,000
Government-backed debt	10,100	11,265	11,180	15,500
Reserves	650	775	1,045	1,150
Net debt	24,350	24,678	23,795	26,350
Romania:				
Gross debt	9,387	10,160	9,766	9,000
Commercial debt	6,537	6,167	5,409	4,900
Government-backed debt	1,670	1,845	1,428	900
IMF/IBRD/BIS	1,180	1,736	2,516	2,800
CEMA banks		412	413	400
Reserves	300	345	370	250
Net debt	9,087	9,815	9,396	8,750
Yugoslavia:				
Gross debt	17,440	19,031	18,488	19,000
Commercial debt	12,963	13,732	12,393	11,600
Government-backed debt	2,200	2,400	2,600	3,100
IMF/IBRD	2,277	2,899	3,495	4,300
Reserves	2,600	2,700	1,675	1,900
Net debt	14,840	16,331	16,813	17,600

[1] Preliminary estimate.

Sources: Wharton Econometric Forecasting Associates "Balance of Payments and Debt Forecast and Current Analysis"; Gerhard Fink, "Poland's Statistics on Current Account of the Balance of Payments in Convertible Currencies," Vienna Institute of Comparative Economic Studies, 1983; quarterly and semiannual reports on international banking of the Bank for International Settlements.

TRADE AND PAYMENTS PROBLEMS IN EASTERN EUROPE: THE DEBT CRISIS FORCES POLICY CHANGES

By Lawrence J. Brainard[*]

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I. INTRODUCTION

What started four years ago in Poland is now a common event in international finance. Since Poland's moratorium on debt payments in March 1981, some thirty countries around the world have been unable to make their debt payments and have asked for debt rescheduling. In South America, for example, all countries with the exception of two—Colombia and Paraguay—are rescheduling their debts.

In both Eastern Europe and Latin America, banks reacted to an initial payment default in one country by restricting and reducing credit to other countries in the area. This, in turn, put severe pressures on those countries. The Mexican payments crisis in August 1982 triggered reschedulings within several months in Argentina and Brazil. The contagion then quickly enveloped Chile, Peru, Ecuador, Venezuela and Uruguay. By contrast, it is noteworthy that only three of eight Eastern European countries have sought debt rescheduling. Romania followed Poland in suspending payments in July 1981. In January 1983, Yugoslavia asked western creditors for a refinancing of debt in an action coordinated by the International Monetary Fund and western governments.

A key issue is how most of Eastern Europe has so far managed to avoid debt rescheduling, something Latin American countries could not do. Given intense media interest in Poland and the political controversies surrounding East-West lending within NATO, a popular perception has built up, that, to a greater or lesser degree, extrapolates Poland's debt problems to the entire Eastern European area. In this stereotyped view, Eastern Europe is seen as an area with an excessive debt burden, few means to repay this debt, and an inability to restrict import requirements.

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[*] Bankers Trust Company, New York.

Recent data contradict this view. Most Eastern European countries have managed their debt problems by means of effective actions boosting exports and cutting imports. Indeed, one may conclude that Poland's inability to manage its economic problems represents the exception rather than the rule for Eastern Europe.

II. The Bandwagon Effect and Bank Lending

The Polish payments moratorium in March 1981, led to a profound change in bank attitudes toward lending to Eastern Europe. In retrospect, one is struck by the gradual nature of these changes compared with the rapid exit by many lending banks in Latin America during 1982-83. New bank lending dried up immediately, but reductions in existing credit lines took some months to emerge. During the spring and summer of 1981, banks cut their exposure in Romania, the country seen by the banks as most likely to follow Poland's example. Faced with the loss of its credit lines, Romania was forced to suspend principal payments in July. Despite this development, a mass exodus of banks from Eastern European lending did not yet develop. Both Romania and Poland continued to pay interest on their debts, though the Polish payments became increasingly delayed.

For the most part, banks maintained their levels of credit exposure, but avoided any increases. To be sure, this was a major change from previous years, which saw steady increases year after year in bank credit to Eastern Europe. The indebtedness to western banks of the six smaller Comecon countries declined only $1.8 billion in 1981, compared to a rise of $3.2 billion in 1980 and $8.6 billion in 1979 (Table 1). In fact, most of the decline in 1981 appears to reflect translation effects on the stock of debt due to the rising value of the U.S. dollar. Both the Soviet Union and Yugoslavia increased their borrowings from the banks in 1981.

TABLE 1.—EASTERN EUROPE'S CAPITAL TRANSACTIONS WITH WESTERN BANKS

[Net flow West to East; billion dollars]

	Total	Changes in debts owed to		Net interest payments [1]
		Western banks	U.S. banks only	
Eastern Europe Six				
1979	4.7	8.6	0.4	−3.9
1980	−3.1	3.2	−.3	−6.3
1981	−9.7	−1.8	−.5	−7.9
1982	−10.9	−5.8	−.7	−5.1
1983 (January-June)	−5.6	−3.2	−.1	−2.4
Soviet Union				
1979	−0.9	0	−.6	−.9
1980	−.6	.4	−.2	−1.0
1981	1.6	2.9	.1	−1.3
1982	−2.6	−1.7	−.3	−.9
1983 (January-June)	0	.4	.2	−.4
Yugoslavia				
1979	1.3	2.1	.4	−.8
1980	1.1	2.2	.4	−1.1
1981	−1.3	.3	.3	−1.6
1982	−2.3	−.6	−.3	−1.7

TABLE 1.—EASTERN EUROPE'S CAPITAL TRANSACTIONS WITH WESTERN BANKS—Continued

[Net flow West to East; billion dollars]

	Total	Changes in debts owed to		Net interest payments [1]
		Western banks	U.S. banks only	
1983 (January-June)	−1.1	−.3	0	−.8

[1] Includes also payments to non-bank creditors. The 1982–83 interest payments exclude approximately $2.0 billion in accrued but unpaid interest arrears for Poland.

Note.—Eastern Europe Six: German Democratic Republic Poland, Czechoslovakia, Hungary, Romania, and Bulgaria.

Sources: Bank for International Settlements; interest payments estimated.

At the end of December 1981, Poland announced its inability to meet the requirements of the rescheduling agreement which had been negotiated with the banks and had been slated to be signed before the end of the year. The agreement called for all interest payments to be brought up to date. By this time, the delayed interest payments had reached nearly $400 million. Although a compromise was worked out in March 1982, that gave Poland extra time to make up the past due interest, the effect of these developments was significant. During the first quarter of 1982, banks sharply reduced their exposure to Eastern Europe and the bandwagon was rolling. Since it was too late to reduce their exposure in Poland and Romania, the cuts were concentrated on the other countries, including the Soviet Union and Yugoslavia. During the year as a whole, bank exposure to Eastern Europe fell over $8 billion. Approximately 25 per cent of this decline reflects the effects of a rising dollar during 1982.

The data in Table 1 are organized to show the net flows of capital between Eastern Europe and western banks. The total net flow is composed of net interest payments to the West (including nonbank creditors) and any change in Eastern Europe's indebtedness to banks. In 1979, for example, net interest payments for the "Eastern Europe Six" totalled $3.9 billion, but these outflows were more than offset by net inflows of new loans of $8.6 billion. In effect, the burden of servicing interest due was offset by increased indebtedness, a factor which was present throughout the seventies.

Two factors acted to reverse these capital flows dramatically for the Eastern European Six. One was the rise in dollar interest rates which pushed up interest payments markedly in 1980–81. The other was the slowdown in new bank lending in 1980 and the net reduction in bank exposure in 1981–83. The scope of the reversal of capital flows was dramatic for these countries—from a net inflow of $5 billion to a net outflow of over $10 billion three years later. Partial data for 1983 indicate that capital outflows continued during the first half of the year at rates similar to those in 1982.

Yugoslavia's situation was similar to that experienced by these countries, but with about a one year lag. Net capital flows turned negative for the first time in 1981 and a year later indebtedness to banks dropped $600 million. In the Soviet case, the pattern of capital flows was rather different. Net borrowing from banks was minimal in 1979–80; a sharp increase in borrowing was recorded in 1981, reflecting financing for increased grain purchases. Only in 1982, do we see a decline in bank exposure to the U.S.S.R.

Data for credit exposures of U.S. banks reflect a cautious behaviour in this market. U.S. banks reduced their exposure to the Eastern Europe Six beginning in 1980, a year before the total bank aggregate declined. In the case of Yugoslavia, U.S. banks appeared to act similar to other banks. U.S. bank lending to the Soviet Union declined steadily during the late-seventies reflecting the deterioration in political relations. At the end of 1980, U.S. banks claims on the Soviet Union totaled only $491 million, compared to $4.6 billion in claims on the Eastern Europe Six and $2.3 billion on Yugoslavia.

The data in Table 1 also help to test one of the key arguments used in supporting the call for a formal debt default by the U.S. government on Polish debts early in 1982. At the time, it was argued that such an action would prevent banks from lending additional funds to the area. The data show that during January 1982 to June 1983, there was a net transfer of capital from East to West of $19 billion (excluding Yugoslavia). It is doubtful that such flows would have taken place if a formal default had been called by the United States.

III. TRADE AND ECONOMIC ADJUSTMENT

Faced with the sharp reversals in net capital flows, how did Eastern European policy makers react? Table 2 shows the current account balances for the region. This balance measures both merchandise trade and interest and other service payments. A negative position must be financed by increased borrowings or reduced foreign exchange holdings; a positive position indicates the total sum available to reduce debt or to increase foreign assets.

These data show that the Eastern Europe Six achieved a substantial improvement in their aggregate current account balance in 1981-83. There was a total improvement of $9.2 billion, from a deficit of $6.7 billion in 1980 to an estimated surplus of $2.4 billion in 1983. This improvement came about primarily due to a reduction in imports. Preliminary data suggest that exports to the West in value terms rose 2-3 per cent during 1981-82, but imports fell 15-17 per cent.

By contrast, the Soviet Union remained in surplus on current account throughout the last three years on the strength of continued gold sales and higher petroleum export shipments to western markets. Despite sizable grain imports, the overall balance continued positive. In my view, this result derives largely from the desire of Soviet policy makers to avoid being dependent on western credit. It is feared that such a dependency might be used by western countries to obtain political leverage on Soviet policy.

TABLE 2.—EASTERN EUROPE: CURRENT ACCOUNT BALANCES IN CONVERTIBLE CURRENCIES

[In billions of dollars]

	1980	1981	1982	1983 est.
Bulgaria	0.9	0.4	0.4	0.4
Czechoslovakia	−.4	−.2	.4	.5
G.D.R	−1.9	−.2	1.6	1.3
Hungary	−.3	−.7	−.1	.3
Poland	−2.6	−2.1	−2.1	−1.0
Romania	−2.4	−.8	.7	.9

TABLE 2.—EASTERN EUROPE: CURRENT ACCOUNT BALANCES IN CONVERTIBLE CURRENCIES—Continued

[In billions of dollars]

	1980	1981	1982	1983 est.
Eastern Europe Six	−6.7	−3.6	.9	2.4
U.S.S.R	2.5	.5	3.0	3.5
Total Eastern Europe	−4.2	−3.1	3.9	5.9
Yugoslavia	−2.2	−1.8	−1.8	.3

Note.—These data are not directly comparable with the capital flow data presented in table 1. They include an estimated $2 billion in accrued, but upaid interest expense for Poland in 1982–83. In addition, these countries have reduced foreign exchange holdings in order to repay debt in 1981–82; during 1983 their foreign exchange holdings have been rising.

Source: National statistics and own estimates.

Yugoslavia provides a different contrast. Although there was progress in reducing the large current account deficit, the pace of improvement was notably slower than in other Eastern European countries until 1983. The reasons do not lie in the country's trade performance—trends in imports and exports are very similar to those elsewhere in Eastern Europe. Unlike these countries, however, Yugoslavia has suffered a sharp reduction in earnings from tourism and remittances from workers abroad. The reduced foreign exchange inflow from these sources—nearly $1.0 billion in 1982—coupled with the decline in bank exposure in 1982 forced policy makers to seek a comprehensive refinancing of the principal of maturing bank debts in 1983. During 1983, a further decline in imports coupled with substantial export growth brought the current account balance to a small surplus, estimated at $95 million.

IV. Conclusions and Further Questions

The available current account data give us the result of a series of domestic policy measures in each individual country. They do not tell us how the results were achieved, nor do they provide a measure of the sacrifices that were necessary to reach those results.

What they do show is that the countries which have so far avoided debt rescheduling did so by achieving major improvements in their current account positions. Hungary, which showed a small $100 million deficit in 1982, achieved a surplus in 1983. Although the trade adjustment was less marked than elsewhere in Eastern Europe, new credits from the IMF helped Hungary relieve pressures on the balance of payments during 1982–83. Even Romania, which rescheduled a substantial portion of the 1981–83 debt maturities, is in substantial surplus and further rescheduling appears unnecessary.

The exceptions to the above are Poland and Yugoslavia, though for quite different reasons. Yugoslav policy makers may be criticized for their slowness in reacting to the country's balance of payments problems. Though partly influenced by indecisive domestic economic policy which led to an overvalued exchange rate, the reduced inflows of earnings from tourism and workers remittances primarily reflect external influences of recession in Western Europe. The scope for domestic policy adjustment to influence payments trends was, thus, considerably narrower than in other countries. Despite major efforts to combat balance of payments problems, Yugoslav policy makers were unable to achieve a quick turnaround.

Poland's economic problems are of a different nature than those of the other countries discussed above. During the seventies, there was a significant weakening of internal economic disciplines and an erosion of the Government's ability to manage economic activity. The restoration of these disciplines is not a matter of squeezing imports or finding a new mix of economic policies; it is, rather, a fundamental issue of economic structure. The structure of an economy defines the framework in which economic activity is carried out, the way in which factories, managers, workers, farmers, and consumers interact, and structure provides a stability essential for steering the economy. Poland's economy today lacks such a structure and the reasons for this are political rather than economic.

Unlike other Eastern European countries, the Soviet Union faces a different set of economic problems and issues. The country's balance of payments is sound and its current debt position is easily managed. The key questions for Soviet policy makers are how to respond to the sharp slowdown in economic growth at home and in the other Comecon economies. These developments point to stagnation in trade within the Comecon area. Should Soviet policy look to a more active use of western capital and technology while other Comecon members are cutting back drastically on investment and western imports? Is it possible to rejuvenate efforts toward greater Comecon economic integration as an alternative to economic ties to the West? These issues are closely linked to future decisions by the new Soviet leadership concerning the direction of domestic economic policy.

All of this leads to a tentative conclusion. With the exception of Poland, Eastern European countries have acted rather effectively, given the difficult circumstances, to manage their debt problems. Poland's inability to manage its debt situation appears the exception rather than the rule.

We have, however, only seen one side of the picture. The economic adjustments represented by the sharp cuts in imports come at considerable cost to plans for domestic economic investment and technological change, not to speak of hoped-for increases in living standards. So far, there is little sign of a revival of medium-term lending to Eastern Europe; outstanding bank claims are increasingly concentrated in short-term maturities, which carries special risks to the borrower. The implication of all these changes on the pace and structure of future growth are unclear, but it does appear that alternate strategies are being worked out. In response to these developments, Czechoslovak authorities recently announced their intention to repay most of their (relatively modest) foreign bank debt of $1.8 billion during the next three years.[1] Hungary, by contrast, has decided to strengthen economic ties with the IMF and World Bank, hoping, thereby, to promote relations with western financial institutions. Economic and political pressures for workable responses to these problems will be strong and persistent in the coming years.

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[1] Wall Street Journal, Jan. 26, 1984, p. 40.

THE DEBT CRISIS: A SCHEMATIC VIEW OF RESCHEDULING IN EASTERN EUROPE

By Gabriel Eichler *

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I. INTRODUCTION

In the last few years debt rescheduling has become one of a few growth areas in international banking. Country-wide external debt rescheduling has gained attention not because of its novelty. In the last two decades there were at all times several countries not fully meeting their financial obligations and requiring some form of restructuring. Refinancing of borrowing to repay current obligations has been normal practice in finance, be it for the U.S. Government or an individual. The recent change is the number of countries involved (over 30) with debt over $300 billion, the number of banks involved (over 1,500), the forced nature of the exercise, and the general unease in financial circles that the problem is not yet contained. Financial markets are especially concerned about other borrowers in the geographic proximity of the current problem countries, particularly in Latin America and Eastern Europe. While this concern is justifiable, it does not necessarily follow that more countries in these areas will face financial crises in the near future.

It may be argued that the current wave of financial difficulties and restructurings is a result of developments in the last decade and signifies a useful, albeit economically very costly, stabilization. The last decade has been characterized by rapid growth of the euro-markets and of the foreign indebtedness of most countries. Soviet Bloc hard currency debt increased from some $5 bn. to $80 bn. in the decade. It was a result of a combination of pressures, arising from development needs and strategies of economic growth, accommodated by high liquidity in the financial markets—petrodollar surplus. In Eastern Europe the advent of detente in the early

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seventies stimulated changes in political attitudes towards large scale hard currency borrowing for development purposes. The rate of borrowing by many countries was not sufficiently conservative to allow time for establishment of an appropriate institutional framework and for country economic management to analyze and fully understand the economic, social and political dimensions of the high rate of borrowing. The financial position in a number of countries became precarious and in need of adjustment, hence vulnerable to external shocks.

The rapid rise in indebtedness was accompanied by a corresponding rise in debt servicing requirements (interest payments and repayments of principal). In the last three years the debt servicing problem was exacerbated by unprecedentedly high interest rates. For a country like Poland, with $27 billion of foreign debt, each 1 percent increase in average interest rate means a $270 million increase in the annual debt servicing burden. Since the majority of commercial loans are based on floating rates, for most countries the average interest rate increased by several percent.[1] As recession and protectionism in the industrialized world reduced export markets and earnings, while low liquidity and caution in the financial markets affected borrowing capability, the stage was set for a test of the economic and political resilience of many countries.

What follows is an attempt to explore in schematic—hence general—terms the phenomenon of rescheduling, from the point of view of the creditors with emphasis on the East European experience. It is not the intention to present a detailed analysis of the causes of recent individual payments crises or their impact on specific economies in as much as this ground has been well-covered by others,[2] but rather to provide the sophisticated student of East European affairs with greater insight into a general process which has grown in importance to, and consequence for, the entire region over the last half decade.

II. A Model of a Payments Crisis

The development of the relationship between a country in financial difficulty and its creditors can be schematically illustrated in a (albeit simplified) graph. The borrowing desire or requirement of the country is reflected by the thick line. The desire as part of development strategy turns into requirement usually due to the structure of growth or to the socio-economic system, which encourages excessive investment and consumption. The growing number of completed or incomplete investment projects require increasing imports of raw materials and spare parts, while the associated growth of purchasing power of the labor force results in a corresponding rise in demand for consumption of both domestic and imported goods. If the primary source of economic growth is not exports, or the growth of imports plus debt servicing exceeds that of export earnings, the borrowing requirement line steadily rises.

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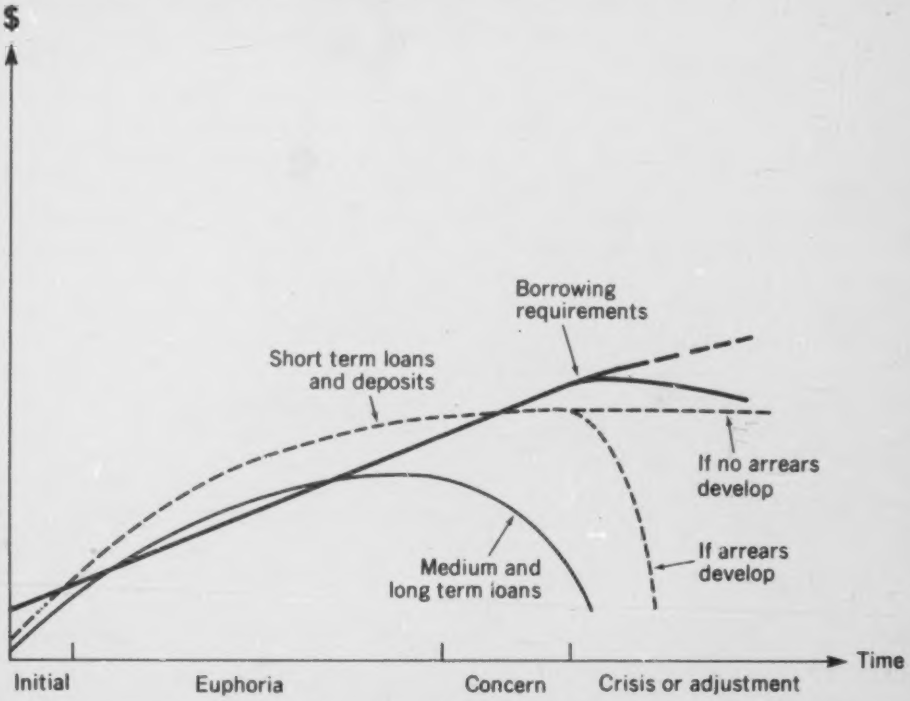
[1] London Interbank Offered Rate (LIBOR) has fluctuated in the last 4 years within a range of as much as 10 percentage points. The average interest rate paid by Hungary increased from less than 5% in 1978 to over 14% in 1981.

[2] Please refer to the current and the 1981 volume of JEC compendia for analyses of development strategies and performance of East European economic systems. Excessive investment and its inefficient allocation is evident in a number of these economies.

The amount of available external borrowing is illustrated by the graph's dotted line, while the thin line represents the portion of medium and long term loans. Short term borrowing is the difference between the dotted and the thin lines.



GRAPH 1. Relationship between a problem country and its creditors.

Four phases in the relationship can be identified. From the point of view of creditors one may call them initial phase, euphoria phase, phase of concern, and crisis phase. The initial phase does not last for long. The country initiates a strategy of development in which external funds are to play a role. It approaches foreign suppliers of capital and technology. The suppliers-exporters in turn approach their banks and official export credit agencies to provide financing of exports. The banks have very little exposure in the country. Since the latter has little debt and presents a reasonable economic growth strategy, banks are pleased to find a new customer for loan growth. The country's borrowing desire is quickly met.

The country becomes well accepted as a borrower in the financial markets and the relationship between it and its creditors enters the euphoric phase. This is especially so if, as in the early and mid-seventies, companies and banks look for expansion in foreign markets. In addition to larger international banks, smaller banks are willing to accommodate the requests of their industrial customers for financing exports to "good" borrowers with and without their government guarantees. Competition among banks intensifies and the borrower dominates the situation. An increasing portion of lending exceeds the immediate value of exports to the country. The country needs working capital—general purpose funds for trade as well as for maintaining financial relations. With the intense competition among banks, the borrower's share of such "financial loans" increases. These come in the form of direct bank-to-bank loans, large general purpose syndicated credits, "local cost financing" in projects, or loans simply exceeding the associated export value.

The offers exceed needs. The borrower may accept the offers and increase its reserves, or conservatively decline them. One can argue in favor of both approaches. The former course is not necessarily ill-advised if the country's financial managers can invest their reserves so as to exceed their costs.

Gradually, an increasing number of creditors conclude that their exposure in the country has reached prudent limits. This change from a period of euphoria into one of concern is perhaps the most subtle transition and the least easy to detect. To illustrate, let us leave the model and review the case of Western bank lending to Eastern Europe at decade's end, by which time the euphoric phase was at an end for some, but by no means all, creditors. A number of factors combined to affect the perceptions of individual lenders over the course of time. Changes (perhaps erroneously) expected by lenders in Eastern Europe were not, in fact, taking place. Individual borrowers were becoming no more forthcoming with economic and external financial information than they had been at the beginning of the relationship. Further, with the exceptions of Yugoslavia and Romania, none of the Eastern European borrowers had achieved—or applied for—IMF and World Bank membership. In the view of most bankers, the significance of these organizations lies beyond the potential funds which both might provide in the case of emergent payments problems. Rather, reassurance is derived from the feeling that the automatic involvement of these bodies bespeaks the existence of a regular, institutionalized mechanism for addressing any unlooked for difficulties in external finance. Lack of desire to become a member of IMF implies lack of desire to be a full participant in the international financial system, lack of commitment to financial order and to act according to the accepted international practices.

Coupled with these two factors was the growing impression that the borrowers of East Europe were experiencing chronic problems in acquiring the hard currency earnings required to finance their trade activities. Again, such perceptions were by no means universal, but exacerbated by the shortage of adequate data they served to damper the euphoric mood which had previously characterized the market.

Finally, the international political climate served to increase the concern of creditors, though not in the simple fashion sometimes stated by East (and even West) Europeans. The bloom came off the rose not so much by virtue of pressure by Western governments, as by increasing perceptions of uncertainty on the part of banks' senior management. Deterioration of East-West relations has an impact on lenders' perception of risk: the deterioration affects the conduct of East-West trade (and thus the borrower's ability to earn hard currency), the willingness of Western governments to help solve financial problems should they arise (note the US and NATO's sanctions in response to martial law in Poland) and the negative publicity has a negative impact on the credit committees of banks (reduced access to financial markets). Now the novelty of the relationship between Western banks and Eastern borrowers served less to quicken the interest of banks' officers as to exercise their instinct for caution. Visions of the erstwhile "umbrella" theory—simply put, the assumption that the USSR would ultimately serve as the guarantor of last resort to an East European borrower—were transmogrified into the equally fanciful possibility of an "inverted umbrella," a concerted reneging on external obligations by CMEA in the furtherance of foreign policy ends. These concerns associated with a desire to maintain a favorable public image tempered the ardor for further East European involvement.

There were, as well, factors internal to individual creditors which also mitigated the former enthusiasm. Certain institutional and legal limits to increase in exposure began to come into play in the late 70's. This is a problem which was aggrevated by the particularly East European system of monopoly banking where there is often only one possible borrower. (US banks are constrained by law to limit their lending to any single borrower to 10% of their total of capital plus surplus). Even when legal limits were not reached, it was often the case that senior management determined that the existing exposure to a given CMEA borrower was sufficient when considering their overall loan portfolio. Further, as such creditors became concerned about the rate of growth of borrowing by a given country and the size of its annual balance of payments deficits, or the combination thereof, their gaze naturally turned elsewhere to more attractive, more "fashionable" prospects and it then became more difficult to receive approval of East European transactions.

Nevertheless, to return to the model, requests from the borrower as well as pressure from suppliers-exporters on the creditors continue. Both are still accustomed to the euphoria period and are only slowly adjusting to the new situation, in which the rate of growth of borrowing requirements exceeds that of lending desire by creditors. Gradually, requests and offers are equal, and the relationship enters a phase of concern. There are basically two sources of repayment of loans: export earnings and access to the financial markets. Since creditors tend to observe the behavior of other creditors, doubts about the second source grow. Hence, concern.

In this critical period, during which banks conclude that their exposure is sufficient, they are no longer willing to commit their funds for a long period but instead replenish their rolloffs by providing short term loans. New lending is increasingly involuntary, and under more pressure from industrial customers (suppliers) and from the borrower. To some extent, governments replace commercial creditors.

From the banks' point of view "short term" loans are precisely that—short term loans which banks expect to be repaid at maturity. If at that time normal financial flows still continue, a bank will rarely see a reason not to extend further short term loans. If, however, any payment difficulties occur, prudence prevents a bank from extending further loans. In this manner banks reveal that they do not desire to disrupt normal relations with the borrowing country, can provide financing for continuation of necessary trade, and allow time for stabilization measures to take effect while protecting their position.

In the current atmosphere of uncertainty and caution in the financial markets, for some countries, particularly those in the proximity of problem countries, the period of concern is sudden and brief. Creditors fail to revolve short term funds even though the country meets its obligations punctually. It is unfortunate, and from the country's point of view also unjust; furthermore, creditors may precipitate crisis. Yet, the behavior of the creditors is reasonable. The lending pattern is based, inter alia, on country risk analysis which incorporates certain assumptions. As creditors increase their exposure the validity of such assumptions undergoes an increasingly thorough review. Since evident similarities exist in the nature of socio-economic systems and patterns of economic behavior in regions such as Eastern Europe and Latin America, a failure of one borrower influences lending to another. But while both Romania and Yugoslavia believed that the Polish debt problem was the cause of their own, this is only true to the extent that an increased vigilance caused the banks to analyze their economic situation in greater depth and draw conclusions from underlying weaknesses which they had earlier been willing to overlook. The internal discussions which are currently taking place in Yugoslavia confirm that serious structural problems have existed and a financial crisis had, given appropriate circumstances, been imminent. At times, an individual country may have the inherent strength to overcome the region's perceived weakness. Many creditors may even share this view. However, unless this view is communicated convincingly to all creditors, prudence prevents individual creditors from acting out of concern with the lack of lending by other creditors. One or a few creditors cannot prevent a crisis and therefore, if crisis is possible, it is prudent for an individual creditor to reduce its exposure as fast as possible.

If a country's economy is pragmatically managed its leadership realizes the dangers of failing to introduce drastic stabilization measures. The country either refuses to accept an increase in short term debt—and if longer term funds are not available it adjusts its economy—or it accepts the short term funds with the intention of repaying them at maturity, thus allowing a short period for economic adjustment. In fact, such management of finances requires not only pragmatism and intelligence on the part of financial officials, but also a solid dose of intransigence, courage and political connections, because it is done under enormous pressure from industry demanding imports and from many banks anxious to provide short term credits. This is even more complicated in Eastern Europe where the long-standing shibboleths of national development policy are very much oriented in the direction of pressing for even more investment and growth. In the traditional view, the financial side of the ledger is a shadow of the plan for economic progress forged at the highest level of national authority. Arguing in favor of retrenchment and consolidation is to fly very much in the face of policies which in many ways are viewed as the bedrock upon which the regime's legitimacy is predicated. As could be seen in the case of Poland, the government neither felt in a position to redraft the plan for industrialization nor to reduce the level of domestic consumption which were both in large measure financed by recourse to external finance.

However, the East European experience shows that well into the period of transition between the euphoric and concerned phases, many borrowers still failed to perceive that there had been a change in market perceptions. (It should also be pointed out that due to institutional characteristics, as well as differing abilities to accumulate and accurately assess economic information, there was also considerable difference on the part of individual banks in recognizing and responding to the altered environment). Even today, some of the region's financial authorities have failed to acknowledge how drastically the scene has changed and this continues to be a source of misunderstanding and potential miscues, the assumption often being that the fact that the bankers no longer come to call is due to Western governmental pressure. Therefore, several CMEA borrowers misperceived the banks' position and continued to accumulate short term debt under the horribly fallacious assumption that it would be continuously rolled-over and even increased as if it were, in fact, long-term. Of course, as domestic demand for foreign currency continued to exceed available funds from the financial market, absence of prudent matching of payment inflows and outflows can easily result in delinquencies on individual payment obligations.

Any report of arrears, missed or late payment from a country will cause an increasing number of banks to refuse extending further loans and deposits. The country's economy reaches crisis, and the country's leaders then tend to blame banks for "withdrawing deposits" and thus causing the crisis. In fact, the source of the crisis rests with the unbalanced growth pattern (a structural or systemic problem) excessively dependent on borrowing, and a failure of the country's managers to adjust this pattern which is vulnerable to internal and external shocks, such as bad harvests or labor unrest on the one hand of reduced liquidity in the financial markets, recession abroad and higher interest rates on the other, all of which characterized the Eastern European scene since 1979.

The tendency to blame the banks for causing the crisis in itself carries a certain danger in that it provides a sense of comfort to the country's leadership and thereby causes delays in the search for and subsequent correction of the underlying economic causes of the crisis. Indeed, many creditors even accept this blame and believe that by returning some deposits crisis, or rescheduling, can be prevented. This view is, of course, fallacious in that deposits and short term loans had not been provided because arrears developed, not vice versa, and therefore partial or even full replenishment of the short term rolloffs will not eliminate arrears. New funds can only help if they are part and parcel of a comprehensive stabilization program. However, bankers may be influenced by financial officials whose well honed arguments are frequently similar to their own personal views or hopes. It is not difficult to put one's faith in a seemingly consistent "plan", a set of stop-gap measures, based on optimistic assumptions about sources of credit. The problem arises when these assumptions fail to materialize.

Once a country reaches the fourth, crisis phase, its economy deteriorates rapidly. It completely loses the confidence of its creditors, normal trade patterns are disrupted, shortages of various commodities develop causing bottlenecks in industrial production and export expansion, and even tourist earnings decline. Since the country can no longer meet its payment obligations to all creditors, it is forced to request comprehensive rescheduling. Even the few remaining voluntary creditors then disappear.

The depth of economic crisis depends on the timing of the rescheduling. When a country reaches the critical period of concern, its financial managers have to determine immediately whether or not their financial inflows are sufficient to keep all payments current. The country is under scrutiny by its creditors and anomalies will quickly result in a total loss of confidence. The financial managers must count on negative press reports (as they are now fashionable) which have some impact on the behavior of a "nervous" financial market. If there is a reasonable chance that payment delays may occur, the financial managers would be well advised to inform the particular creditors in advance (if the cause of the delay is of a specific and short term nature), or seek partial, but comprehensive restructuring (if the problem is more general): partial, in that only a small percentage of total debt falling due may need to be rescheduled, but restructuring should involve all creditors and be just one element of a comprehensive stabilization program. A set of half-way measures do not suffice. The managers must anticipate that even though their action is voluntary, most creditors will refrain from new lending at least until the debt restructuring is completed. However, when the decision to restructure is made before a serious deterioration in the financial position, the country still has sufficient reserves, or has access to bridge financing from such sources as the IMF and the BIS, to keep its payments to creditors and suppliers current, to maintain lower, but uninterrupted trade, and thereby prevent chaos. IMF's role is very important: in addition to providing the necessary funds, it encourages the country not to delay the commencement of rescheduling discussions, and assists in them. In this manner, both the economic transition and restructuring negotiations are conducted in an orderly manner and can be quickly concluded. The country's chances of normalizing its financial flows and regaining the confidence of the financial market are considerably boosted. Further, in the case of Yugoslavia where the current domestic political order is so constituted as to assure the various coalitions of interest within the country that no major modification of institutions can be easily carried out, the need to reach an agreement with the IMF can be invoked by the Federal Executive as an objective external pressure enforcing a need for change.

All too frequently, this is not what happens. A decision to reschedule is, of course, of enormous political significance and highly emotive. It takes a long time for a minister of finance to convince himself of the necessity to reschedule. Then, to persuade the political leadership is an unenviable onus. It means convincing those in power to accept failure of their policies with the accompanying domestic and international political consequences. It is an issue of personal, professional, and national pride. Financial officials may not have sufficient clout within the political leadership. The political leadership, and certainly the population, are frequently ignorant of the full dimension of the country's debt problem. Not unusually, the leadership will fail to act because it is simply unaware of the gravity of the situation and of how quickly a small financial failure turns into economic and social chaos in a country dependent on external creditors.

Disorder occurs both in the economy and among foreign creditors, some of whom (usually due to lack of information and for fear of worse treatment) lose patience and start attaching or offsetting funds flowing through accounts held by them or others, thereby further disrupting the country's financial flows. The crisis is quickly accelerated and rescheduling negotiations become forced, extremely complicated, and tedious. Partial rescheduling is no longer sufficient and rescheduling in subsequent years is highly probable. The nature of refinancing under the optimal conditions greatly differs from that of forced rescheduling.

III. The Rescheduling Process

All three East European countries involved in rescheduling (Poland, Romania, Yugoslavia) waited too long. All continued financing their current account deficits by drawing down reserves, with unduly optimistic expectations that their creditors as a group would return funds on a large scale. Only when reserves were drawn down to unsustainable levels and arrears developed did their financial managers turn to the creditors and request rescheduling. Furthermore, Romania and Yugoslavia did so only after considerable persuasion by the IMF; early advise by some bankers was ignored, due to internal political reasons noted in this paper, combined with continued undue optimism about sources of credit, contrary advise by other bankers, and lack of foresight.

The initial tendency on the part of many governments which find themselves thrust into the spotlight of a major rescheduling is to enforce a rigorous clamp-down by administrative means on "non-essential" imports as well as to attempt to boost exports by reducing supplies to the civil population. While in the short run the results of these exercises appear impressive on paper (which is the intention—and which often is greeted with some success on the part of the more credulous creditors—) the effect in the longer term can be disastrous and serve to exacerbate and prolong the period of crisis. What does rescheduling involve and why does it take so long? At least four groups of creditors are involved: commercial banks, 15 governments of industrialized countries, informally known as the Paris Club, other governments and central banks (especially oil exporting countries), and commercial suppliers. In some cases, Comecon banks are also involved. Early experience showed that banks did not conclude their discussions before the Paris Club, which in turn waits for an agreement between the borrower and the IMF. The recent experience in the case of Eastern European reschedulings is that banks, driven by regulatory pressures and by their own activist nature, were willing to act before other creditors. In Poland, the IMF has no role and the governments have not acted due to political considerations; in the Romanian case, Paris club simply copied the banks' terms, and in the Yugoslav instance the Paris Club was not convened. The Yugoslavs did not approach the governments with a request to reschedule but under IMF guidance requested a financial assistance package—the "Berne Accord". In the 1984 Yugoslav restructuring the banks acted well before the meeting of the governments in presenting a package to the borrower. Similar conditions were later adopted by the governments.

IMF's requirements include a comprehensive stabilization program which tends to incorporate many highly unpopular measures such as devaluation of currency, withdrawal of price subsidies and of subsidies to unprofitable enterprises, tight monetary policy and reduction of budget deficit. Long and tedious negotiations are to be expected. In the process, the amount of a standby credit (or other facility) is determined. However, disbursements cannot take place as long as payments arrears to other creditors exist. Therefore, a long period elapses before any funds are in fact received by the borrowing country.

Paris Club tends to operate somewhat faster, a considerable part of the work having been done by the IMF. Complications arise when the borrowing country requests sizeable new funds from the Paris Club. The decision on the apportioning of any money provision among the various governments depends upon the borrower's relative strategic, commercial, and political importance. Historically, Paris Club members prefer to deal with this issue individually, not collectively.

Perhaps the most complicated are negotiations with commercial banks. To begin with, there are too many banks involved, ranging from a few dozen to over a thousand, depending on the borrower. So the first task is to organize the banks. Based on the number and relative size of creditors, the forms of organization range from a small steering committee to a complete set of international and national task forces with subcommittees.

Growing experience of banks has accelerated the initial organizational task. While it took some three months from the date of the initial Polish request for banks to organize into various committees, in the Mexican case it seemed like only hours. Communication among banks has also improved. The people on the Romanian committee had known each other for many months from their work on Poland, and many of the same players are involved in the various Latin American reschedulings.

While the banks have developed various routines and precedents, for any individual country rescheduling is a new experience. Since rescheduling is of such great political importance, decisions frequently need to be made at high echelons of the leadership. These people rarely have any financial background. Thus, many technical and legal issues, normally handled routinely by bankers, now need approval of political authorities. The approval involves lengthy explanations and bargaining and is therefore time consuming. Some issues enter into foreign policy considerations. An example of one such issue is that of equal treatment (the most important issue to the banks as well as perhaps the only one that all banks agree upon). Banks insist not only that all banks participate equally in the reschedulings but that no other group of creditors receives preferential treatment. Banks therefore require information on how other creditors are treated. While details of Paris Club agreements become generally known, financial relations of, say, East European countries with other Comecon members and Arab countries are more intricate and shrouded by secrecy. The banks' desire to insure non-preferential treatment of these creditors therefore enters the sensitive arena of foreign policy.

On other issues there is less unity among banks. Priorities and interests of perhaps 500 banks from over 20 countries obviously differ due to differences in laws and regulations, accounting and auditing practices, priorities of national bank examiners, relationships of banks with the governments and with industry in their countries, the nature of trade relations, foreign policy considerations, differences of interest due to the varying size of banks, and differences in the evaluation and understanding of the needs and capabilities of the borrower. Individual banks therefore put different emphasis on issues such as economic conditionality, the role of the IMF, capitalization of interest, inclusion of short term loans and deposits in the rescheduling, negative pledge clauses, and on basic terms and conditions of the rescheduling. How various financial instruments, (such as inter-bank deposits, short term credit lines, bonds, supplier credits, government guaranteed credits) are treated in reschedulings has a major impact on the future nature of international finance and on established attitudes related to these financial instruments. Since on all these issues the borrower argues for the easiest possible conditions, tensions develop within the group of banks.

Hence, negotiations among banks themselves are frequently much more involved and strenuous than negotiations between the banks and the borrower. For that reason numerous meetings take place without the borrower being present. Nevertheless, banks tend to act with much more alacrity and vigour than the borrower. More often than not banks wait for the borrower to approve some points or to provide additional information.

Borrowers quickly become aware of the differences among banks. At times, their negotiators become intransigent even over relatively unimportant points. Negotiations then become unnecessarily protracted. When banks ultimately give in, the negotiators present it to their authorities as being due to their excellent performance, when in fact the economic cost of the lost time may exceed the gain. Some borrowers hire investment banks to assist them or even to negotiate on their behalf. These institutions take even bigger pride in "winning" negotiating points. But again, if one includes in the benefit and cost analysis the cost of loss of time and of the banks' good will, as well as the sizable fees these institutions charge, the gain is more dubious.

Ultimately, a legal document is to be agreed upon. A law firm and body of law which is to govern the agreement have to be selected to the satisfaction of the banks. The agreement itself has to be such that it can be written as a legal document and one needs to add the burdensome and time consuming necessity of translating the legal documents from English to the local language.

The choice of lawyers and the legal document are very important. The lawyers can considerably speed up the process by concentrating the discussions among the banks on relevant issues and by anticipating further discussions and developments with drafts of clauses, telexes, etc. The legal agreement's usefulness goes beyond legally protecting the creditors and borrowers; it is the definitive guideline on the mechanics and timetable of the rescheduling.

The actual sums involved in the rescheduling are not included in the legal document, but are signed separately by individual creditors and borrowers in the form of debt notices. The collection of this data and its reconciliation is an onerous task performed by an accounting firm, a task which can take many months, further delaying the completion of a rescheduling.

The preceding discussion reveals that a rescheduling agreement is an extensive and complex set of compromises, a result of tedious negotiations among a number of interest groups on both the creditors' and borrowers' side, reached within a limited time period. It should dispel the fallacious image of a highly rational, well thought out program of action, as if a rescheduling was achieved by a group of well informed, influential persons with a common interest, whose conclusions will be accepted by all parties.

A common trait in the three East European reschedulings (shared with most other rescheduled countries) was the belief early on in the process that theirs was but a short term liquidity problem. This view held that the problem arose due to the bunching of maturities in the current year, exacerbated by high interest rates and the myopic view of creditors unwilling to increase their risk exposure. The long term structural and systemic causes of the crisis were ignored. Therefore, the reasoning went, rescheduling of debt falling due that year and a sizeable dose of new funds were all that was needed to overcome the problem.

IV. The Case of Poland

In the early stages of the Polish rescheduling many banks as well shared that view. However, as the rescheduling increased the bankers' familiarity with the inherent systemic problems, and as experience was gained in other problem countries this led to a deeper understanding of the real causes of the crisis.

The Polish rescheduling in effect started in early 1979. Western banks' concern about Polish balance of payments developments and lack of basic information in 1977 and 1978 reduced their appetite for lending to Poland. After lengthy and tedious negotiations for economic information in 1978 and after Polish promises of pending improvements in the balance of payments situation, as well as intended changes in the size and allocation of investment funds, a large internationally syndicated loan of $550 mn. was organized for Poland. The importance of this loan went well beyond its size, in that it provided a psychological boost to Poland in the market—consequently leading to an additional increase in borrowing capacity—and allowed it a period for stabilizing the situation. Yet, very little improvement was noted.

When Poland returned in early 1980 with a request for a second large syndicated loan, a steering committee was established by the banks to analyze the banks' as well as Poland's needs and to coordinate the banks' information and economic policy requirements. After lengthy discussions, a loan of $325 mn. was extended to Poland; even that reduced amount was possible only with considerable contributions from Soviet and Polish banks in the West. West German banks concurrently organized a separate syndicated loan of DM 1200 mn.

By this time, one can now surmise that the main intention of the participating banks was to prevent a sudden withdrawal of funds from Poland and thus prevent a crisis. Again, insufficient action by the Polish side either on the domestic or international economic scene, resulted in domestic political crisis and international financial crisis. Advice by a few bankers to initiate a comprehensive rescheduling was not heeded.

The period 1978–1981 also illustrates how informal conditionality, that is, the linking of further lending to certain agreed upon economic policies or targets, operates; unfortunately, the borrower failed to meet its side of the bargain. While bank lending continued at a very reduced rate, and only for short tenors (short term debt increased from some $600 mn. to $2 bn. in that period), Polish debt increased by nearly $10 bn. to $25 bn. with its composition clearly shifting toward Western government credits and guarantees. The US banks' exposure in that period increased by a mere $200 mn. When Polish financial officials finally approached the banks with the request for a comprehensive rescheduling, to many participants' surprise the banks' portion of Poland's debt was smaller than public estimates; later data shows that less than one third of Polish debt was due to banks. Furthermore, several hundred million dollars in short term deposits by Western banks in Poland were withdrawn shortly after and in reaction to the announcement of formal rescheduling.

Polish officials invited some 40 banks to London in March 1981, to explain their situation, and requested that a multinational task force be set up. An agreement on the basic terms and conditions was only reached some seven months later and the signing of the complete document another six months after that. Poland was the first major comprehensive rescheduling; both the borrower and the banks were institutionally unprepared. It took three months just to organize the committees—on the national level, international level, as well as appropriate subcommittees—then a further three months to define the issues, agree on a common approach among the banks, and get initial Polish responses.

The banks established a Multinational Task Force (MTF) of some 20 banks from 12 countries; 7 banks from 6 countries then formed a Working Party to work out issues in detail and prepare documentation in conjunction with the lawyers. An eight member International Economic Committee was established to deal with economic and conditionality issues. The last two groups continue to exist, while the MTF has since been reduced in number to a Group of National Agents, one bank each from 13 countries.

The main issues of contention were the types of credits to be excluded from the rescheduling, the percentage of non-excluded maturities to be rescheduled, the governing law and law firm to represent the banks, equality of treatment for all creditors (including members of Paris Club, creditors from Arab and CMEA countries, and non-financial institutions), and economic aspects—information, conditionality, assessment of stabilization programs, etc. Paris Club, much less concerned with any of these issues, reached basic agreement with Poland by April 1981, followed later by bi-lateral agreements before year end (excluding the US).

Many of these issues having been resolved, discussion about 1982 maturities could have been shorter had it not been for other complications: martial law in Poland and the NATO response (cessation of rescheduling discussions), combined with the failure by Poland to make interest payments and its insistence on new credit facilities, introduced considerable uncertainty and a need for the banks to act on their own. The 1982 negotiations were completed by November 1982, with interest arrears continuing until March 1983.

The 1983 discussion again lasted relatively long: Poland introduced a completely new negotiating team and pressures within Poland produced an unattainable negotiating position. Nevertheless, the agreement was signed in November 1983 and by year end Poland was for the first time in two years current on all of its financial obligations. Poland has fully met all financial obligations under the three rescheduling agreements—a fact which gives bankers confidence and sustains a desire to continue serious discussions to resolve the international financial aspects of the Polish economic crisis.

The 1984 discussions were conducted with both sides desiring a speedy conclusion and the introduction of the first steps towards normalization of Poland's external financial flows. The banks and the Polish authorities reached an agreement on terms of rescheduling of maturities falling due in 1984–87, thus completing the process of rescheduling of Polish debt to the banks. The Paris Club has also reached an agreement on unpaid maturities which fall due before January 1985. Although initialed, the Polish side makes signing of the agreement subject to Paris Club commitment on new credits in the amount of $1.7 billion.

The Polish rescheduling provided important organizational and legal precedents and was of major heuristic importance for the many reschedulings that have since followed. Concepts, such as the economic committee, have since become accepted practice in rescheduling worldwide.

V. THE CASE OF ROMANIA

The Romanian rescheduling started in June 1981 when arrears developed on payment transfers to dollar clearing banks in New York. The banks made payments on instruction from the Romanian Foreign Trade Bank but funds expected to cover those payments failed to arrive, without any explanation or with promises of cover which remained unfulfilled. As this news broke, other banks refused to fulfill Romanian payment instruction until cover was received, thus creating an estimated gross amount of $600 mn. in unexecuted payments. This situation gradually led to a freeze in credit negotiations and considerable arrears to both suppliers and banks. Later in the year Romania failed to meet (albeit for a brief period) its obligations on foreign exchange trading transactions with some Swiss banks—an action considered a very serious transgression of banking practice.

Only after several months of intensive effort by the IMF did the Romanians invite to Bucarest, in January 1982, senior officials from ten major international banks. As usual, the issue was explained as a short term liquidity problem, caused by reduced access to the financial market (as a result of the Polish crisis) and a temporary increase in the price of oil. This view was partially shared by the IMF.

The Romanians requested the establishment of an advisory committee of nine banks. Having had the Polish experience, and having the advantage of a smaller group, the banks moved with considerable alacrity, avoiding some highly tangled issues. The basic information was prepared by the Romanian officials with considerable assistance from the IMF. Even so the negotiations were concluded only at the end of the year; even the smallest steps required the approval of the highest authority in Romania.

A radical change took place in the 1983 negotiations. The Romanian financial officials came to the negotiating table with full authority to negotiate within specified guidelines and to implement all standard steps. The basic agreement was reached by mid-February in two meetings. Only due to the time consuming reconciliation of debt was the full document signed in June, still in record time—a dream of a rescheduling negotiator.

Romania has since met all its financial obligations.

VI. The Case of Yugoslavia

The Yugoslav instance provides an interesting twist to the standard CMEA typology in that there exist independent, regional commercial banks. The 1983 general payments problem started, in fact, in mid to late 1982 when Privredna Banka Zagreb (and later, Investicional Banka Titograd) began to run arrears in debt service and fulfilled its promises to pay only partially. All other regional banks were meeting their obligations. The National Bank was unable or unwilling to overcome the developing arrears due to the dispersion of authority which is built into the structure of Yugoslav banking. The problem of delegating responsibility hobbled efforts to achieve an early recognition of the problem. The National Bank wanted to enforce the principle of having all banks assume responsibility for their own arrears, but at the same time also wished to maintain the role of lender as last resort. These problems coupled, again, with naive optimism about obtaining short term credits in order to get through the "temporary" rough spots served to delay effective action until 1983. For reasons of prestige and politics, the Yugoslav authorities were unwilling to formally request rescheduling. However, the deepening crisis impelled them finally to heed the advice of IMF and join with the commercial banks in a meeting in Zurich in January 1983 in order to discuss the "consolidation and refinancing" of Yugoslavia's 1983 maturities. The Yugoslavs never appeared before Paris Club, again because of lack of a formal request for rescheduling, but met with the major Western governments with the addition of Kuwait in Berne (The Berne Accord).

The subsequent negotiations stretched out over eight months with the vicissitudes by now common for such complicated agreements. The package was finally agreed to in September 1983. In addition, in a response to an IMF plan, the banks pledged a further $600 mn as part of a new money facility for the National Bank in order to build up Yugoslavia's reserves. The Berne Accord governments also committed themselves to provide new money in order to finance their national exports to Yugoslavia but a considerable portion of this money remained undrawn by the end of 1983 due to the general tightening of the domestic conditions for investment. The formal compact between the Yugoslav borrowers and the banks had no conditionality provisions, outside of requiring the generation of certain economic data on a timely basis, since in this instance the IMF was able to play this role. The 1984 agreement with both the banks and governments was reached very quickly.

VII. CONCLUSIONS

Forced rescheduling is a traumatic experience for a country. The period of discussion is long. Therefore, for a long period the conduct of international trade is limited as banks hesitate in confirming payments to both exporters and importers without sufficient collateral security. Exports are affected as well as imports, because banks are reluctant to provide guarantees for contracts (such as bid and performance bonds). The speed at which economic chaos ensues is remarkable and its social and political consequences are enormous. In addition, the direct financial costs of rescheduling are substantial including larger interest payments, various restructuring, legal and accounting fees, and considerable out of pocket expenses associated with the meetings and negotiations. Perhaps the only positive aspect of rescheduling and financial crisis is the educational aspect: more often than not it takes a crisis to provide support to those groups within ruling bodies which put priority on pragmatism and efficiency in economic management instead of on ideology and local politics. It takes a crisis for both banks and governments to appreciate the depth of the relationship between finance, economics, and politics.

The cost of rescheduling to banks is also considerable. First, it disrupts the flow of funds. Second, it hampers a bank's ability to select loans on the basis of profitability and risk. Third, the cost of management time—including senior management, country desk officers, credit officers, lawyers, economists and liability managers—is substantial to which need to be added costs of communication and travel. A fourth costly aspect is the need for increased reserves against loan losses and allocated transfer risk reserves (ATRR) imposed, as in the case of Poland, by U.S. regulatory agencies. All of these constitute direct and opportunity costs. Fifth, unfavorable publicity affects the price of bank shares, and consequently sources of funding and overall lending ability. Nevertheless, if over a period of time the problem is resolved and no write-offs occur, interest and fee earnings from rescheduled amounts reasonably compensate the costs and efforts associated with it.

The increase in the occurrence of reschedulings has a negative effect on international trade. Large amounts of funds which would normally be used to finance trade are not returned to banks for that use and are instead tied up in long term rescheduling. The general uncertainty in the financial markets causes banks and exporters to be very cautious and selective in accepting additional risks. A large number of small banks and even larger banks have withdrawn from or limited international lending. Banks and exporters call on official export guarantees on unpaid loans to problem countries, thereby reducing funds in government export promotion programs. This is a point which should be borne in mind when analyzing the improved trade surpluses of CMEA. Such achievements may be due less to improved export performance or increased administrative control over imports, as to the fact that the sources for financing such imports have become considerably tightened. Combined with the increasing protectionist pressures, prospects for international trade are affected and the nature of international finance altered.

There are many lessons to be drawn from this experience. For national economic management they include a need for prudence in borrowing behavior and in the pattern of economic growth. Rescheduling is very costly and if possible should be avoided. A country should certainly not attempt to reschedule just because it is now fashionable to do so. However, if it cannot be avoided, appropriate steps towards a comprehensive rescheduling should not be delayed, and a select group of creditors should be approached for advice. The central bank should do everything possible to keep all payments, especially interest payments, current in order to prevent a sudden loss of confidence by its creditors.

For banks, prudence calls for more serious attention to be paid to country risk analysis and to the evaluation of the nature of the ultimate source of repayment of each loan. Banks cannot simply depend on the source of repayment being another loan from another source, because when confidence is lost all sources of new funds tend to dry up. Currently, positive collective action is desirable to prevent a proliferation of countries in financial difficulties. International and intergovernmental institutions as well as ad hoc groups must provide leadership in this process. This is especially important for a number of countries which heroically keep current on all their obligations with the hope that they will thus regain the confidence of the creditors who are reluctant to provide new funds due to the general uncertainty in the markets and to the proximity of these countries to problem borrowers. Reduction in lending is in many cases desirable to enforce rationalization of economic policies, but sudden large scale withdrawal may unnecessarily precipitate crisis which is undesirable. Correct adjustment of the lending pattern is a delicate task and a large and heterogenous group of creditors cannot handle this task with appropriate precision. Prudence prevents an individual bank from maintaining its lending to a borrower while others rapidly reduce it; the task can only be handled collectively, with an appropriate catalytic action from an external source.

TABLE 1.—TERMS OF EAST EUROPEAN RESCHEDULING AGREEMENTS

	Poland				Yugoslavia		Romania	
	1981	1982	1983	1944–87	1983	1984 [1]	1982	1983
Percentage maturities rescheduled [2]	95	95	95	95	100	100	80	60
Spread above LIBOR	1¾	1¾	1⅞	1¾	1⅞	1⅝	1¾	1¾
Spread above prime	1¾	1¾	1⅞	1¾	1¾	1½	1¾	1¾
Rescheduling fee (percent)	1	1	1	1	1⅛	⅞	1	1
Grace period (years)	4	4	[3] 5	5	3	4	3	4
Tenor (years)	7	7	[3] 10	10	6	7	6½	6½
Amounts rescheduled by banks (billions)	$2.0	$2.2	$1.3	$1.6	$1.0	$1.1	[4] $1.1	$.7
New credits (millions)	0	$375	$175	[5] $625	$600	0	0	0
Spread above LIBOR		1½	1¾	[6] 1⅝–1¾	1⅞			
Spread above prime		1½	—	—	1¾			
Facility fee (percent)		½	½	½	1⅛			
Type	(7)	(7)	(7)	(7)	(8)			
Grace period (years)		—	—	—	3			
Tenor/final rpmt (years)		3	5	5	6			

[1] The 1985 agreement is to cover 1985–88 maturities.

[2] Interest has not been rescheduled and has been paid fully.

[3] From Jan. 1, 1983.

[4] Includes 1981 arrears.

[5] Estimated amount, to be disbursed in 1984 and 1985.

[6] 1⅝ in first 3 years, 1¾ remaining 2 years.

[7] Revolving short term trade rel. facility.

[8] Medium term loan.

EAST EUROPEAN FINANCIAL RELATIONS WITH THE WEST AND PERSPECTIVES FOR TRADE

By Gerhard Fink and Kurt Mauler *

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I. SUMMARY

Because of the substantial hard currency trade deficits and the increasing hard currency debt of the East European countries in the seventies, drastic external and internal adjustments became inevitable in the early 1980s, when exports to the non-socialist countries stagnated. First of all imports had to be cut drastically. In 1981 this resulted in a hard currency trade surplus of $0.5bn, due to a $3.3bn surplus with LDCs and a reduced deficit with the West ($2.7bn). In 1982 a surplus was reported with both regions: $1.7bn with the West and $3.6bn with LDCs. Because of the surplus on current account and of the dollar appreciation net debt in 1982 decreased for the first time after a decade (by $4.3bn or 7.3%) and is estimated at $56.3bn in 1982. The external adjustments made internal adjustment inevitable. The growth of national income, which had already declined in the second half of the seventies, had to be slowed down further, to 2.6% in 1981 and 1.9% for EE (excluding Poland). This was accomplished by an absolute decrease in investment and stagnating or even declining real incomes of the population.

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For an assessment of trade perspectives with Eastern Europe we have set up two scenarios, all starting from the relatively favorable balance of payments situation in 1982.

(A) "high growth scenario" with a real GDP growth rate of 3% annually in the OECD for 1983/90. In this scenario we distinguish three variants of Western credit policies:

A1: "liberal": 100% of the principal due are refinanced;

A2: "tight": only 70% of the principal are refinanced;

A3: "concessionary": new credits exceed the principal due by 10%.

It is assumed that Eastern Europe will be able to maintain its 1982 export market shares in the West.

(B) "low growth scenario" with stagnation in the OECD area (real GDP growth 0% to 1.5%) and no real growth of exports and imports of EE.

The results can be summarized as follows:[1]

Whereas five East European countries show very similar patterns in our projections, Poland is a case apart. Even in the high growth scenario Poland's imports are in all three variants projected to decline substantially in the first half of the eighties. The projections do not provide an economically viable solution.

A feasible economic solution to the Polish crisis can only be found, if Poland regains the export market shares in the West, which it had in the mid-seventies before the crisis, namely appr. 0.5% (1982: 0.27%) and if financial solutions are found which facilitate and support this transition. Furthermore, economic stability can hardly be achieved without a solution of the internal political problems.

For the other five countries we draw the following conclusions:

Depending on the credit policy pursued, a further adjustment of imports from the West is needed in 1983/84.

In the long run, however, exports and imports in trade with the West can grow at similar rates.

In the different versions of the high growth scenario the imports from the West are projected to achieve almost the same level by 1990, irrespective of the short term adjustments needed in 1983/84.

In the low growth scenario the level of imports from the West by 1990 is, however, only 60% of that in the high growth scenario.

An increase of the interest rate would noticeably reduce the import capacity of GDR, Romania, and Hungary.

UNSOLVED PROBLEMS

Debt service ratios, including short term debts, are and remain high for all countries, except the CSSR. This means that East European countries must pursue a skillful debt management policy. They are highly dependent on a sensible and complaisant attitude of Western lenders.

The hard currency surplus in trade with LDCs was tremendously extended during 1981 and 1982. It remains to be seen whether the CMEA countries will be in the position to maintain the surplus during the projection period. If the CMEA countries fail to do so, they will either have to reduce their imports from the West or will need more credits.

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[1] See graphs 1 to 6 and Tables 3 and 4.

Similar uncertainties are related to the service and transfer payments of the FRG to the GDR ("small umbrella") and the hard currency surplus of Hungary with the Soviet Union.

This leads to the following overall conclusions:

The external problems of EE (excl. Poland) have been reduced to manageable dimensions by the adjustments made in 1981/82.

Most probably no crisis is ahead, if the governments of EE pursue cautious policies regarding economic growth and vigorous policies for improving competitiveness in Western markets as well as in LDC markets. These policies need to be supported by a judicious debt management policy, aided by cooperative Western lenders.

The integration into the capitalist world market in the seventies resulted in an increased dependence on the Western business cycle and the consolidation of the achievements of recent years depends to an important degree on an economic upswing in the West.

From a Western exporter's point of view we can express our findings in one sentence:

If there is business in the West, there will be business in the East too.

II. INTRODUCTION

1982 was the first year after more than a decade that the East European countries [2] could report a surplus on the current account of their balance of payments in hard currencies. Due to this surplus and to the appreciation of the dollar, Eastern Europe for the first time recorded a decline in net debt, which, according to the Central Intelligence Agency,[3] amounted to $56.3bn at the end of 1982.

Since the surplus on current account was achieved by cutting back on imports from the West, we are now confronted with the question, whether "adjustment" [4] to the liquidity squeeze signals a long term downward spiral in East-West economic relations or means a temporary cutting back of imports from the West and slowing down domestic economic growth in Eastern Europe for a limited time period only, after which business could go back to normal.

In order to find an answer to this question we have set up scenarios projecting East-West trade and credit relations up to 1990. Of course these scenarios are built upon a certain philosophy which, we think, can be more easily appreciated by the reader who knows how we see the development of the debt during the last decade.[5]

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[2] Eastern Europe = CMEA(6) = Bulgaria, Czechoslovakia, GDR, Hungary, Poland and Romania.

[3] See contribution to this volume.

[4] See contribution by J. Vanous to this volume.

[5] For details please see in this volume: Vanous. Also Fink, 1983b; Fink/Levcik, 1983; Levcik, 1983; Levcik/Stankovsky, 1983

III. THE DEVELOPMENT OF THE DEBT IN THE 1970'S AND EARLY 1980'S

1. The initial phase

During the 1960s East-West trade was more or less balanced. East European exports to the industrial West[6] increased by 10.5%[7] on annual average and imports from the industrial West by 11%. In contrast to this, the first half of the seventies was characterized by intensified trade of Eastern Europe with the West. But while growth rates of Eastern exports to the West nearly doubled (to 20.2%), those of imports almost trebled (28.5%) and the trade relations turned into a structural deficit position of the East European countries. Nevertheless, by the end of 1975 the East European net hard currency debt was still modest, about $19bn.

The background of this unprecedented trade expansion is well known. The favorable political climate of détente coincided with expanding world trade and economic interests stressing the possible mutual benefits of intensified economic relations between East and West. Western exporters saw the East as an expanding market, promising for the future, because of its unlimited demand; for the East easy access to Western technology seemed to open an opportunity to modernize the economies and in some countries (e.g. Poland) a chance was also seen to bridge supply bottlenecks in consumer goods by imports from the West on credit basis. The perspective of a modernized production seemed to justify increased trade deficits and the build-up of a modest hard currency debt: the new technologies imported on credit after completion of the investment projects would finally produce goods which would be competitive on the world market and after some time would earn the export revenues needed for repaying the credits.

2. Rapid expansion of the debt

1975 was a signal: it should have been a turning point, but actually business went on nearly as usual until 1979. Due to stagnating markets in the industrialized West in 1975 exports of Eastern Europe (EE) declined by 1.7%, but imports still increased by 6.9%. The trade deficit, which was already high in 1974 ($5.2bn), jumped to $6.5bn. This was five times the deficit of 1972 ($1.2bn) and two and a half times the deficit of 1973 ($2.6bn) (Table 1).

TABLE 1.—EASTERN EUROPE: ESTIMATED NET DEBT AND CURRENT ACCOUNT ITEMS 1971–82

[Billions of U.S. dollars]

	Net debt				Trade balance [2] with			
	Per Dec. 31	Annual change	Revaluation of US dollar [1]	Estimated current account balance	Industrialized countries	LDC's	Nonsocialist countries	Net interest payments [3]
1971	4.9	—	—	—	−0.8	+0.3	−0.5	−0.3
1972	5.7	0.8	0	−0.8	−1.2	+.3	−.9	−.3
1973	8.0	2.3	+.6	−1.7	−2.6	+.2	−2.4	−.4

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[6] "Developed market economies" according to CMEA statistics. All trade data (Annex: Tables B.2 and B.3) in this article are derived from these statistics.

[7] Unless otherwise specified, all growth rates are expressed at current prices.

TABLE 1.—EASTERN EUROPE: ESTIMATED NET DEBT AND CURRENT ACCOUNT ITEMS 1971–82—Continued

[Billions of U.S. dollars]

	Net debt				Trade balance [2] with			
	Per Dec 31	Annual change	Revaluation of US dollar [1]	Estimated current account balance	Industrialized countries	LDC's	Nonsocialist countries	Net interest payments [3]
1974	12.7	4.7	+.1	−4.6	−5.2	+.2	−5.0	−.9
1975	18.7	6.0	−.6	−6.6	−6.5	+.9	−5.5	−.8
1976	25.3	6.6	−.1	−6.7	−6.5	+.6	−5.9	−1.0
1977	32.9	7.6	+1.1	−6.5	−6.1	+.9	−5.2	−1.4
1978	42.3	9.4	+2.2	−7.2	−6.4	+1.0	−5.4	−2.0
1979	51.2	8.9	+0.5	−8.4	−5.4	+.3	−5.1	−3.6
1980	59.3	8.1	−1.7	−9.8	−3.7	−.4	−4.1	−5.7
1981	60.6	1.3	−5.7	−7.0	−2.7	+3.3	+.6	−8.2
1982 [4]	56.3	−4.3	−3.3	+1.0	+1.7	+3.6	+5.3	−7.3

[1] Estimate, using the end year rates of SDR per US dollar (IMF).

[2] National customs statistics; LDCs include trade in nonconvertible currencies and trade under clearing agreements which are not included in the estimated balance on current account.

[3] Estimated, using average interest rates provided by the ECE Secretariate.

[4] Provisional.

The next 3 years (1976/78) had a certain stabilizing effect: exports rose annually by 10.3% and imports by 6.7% on the average. But what was stabilized was only the trade deficit: $6.4bn per year on the average. Net debt went up by $23.6bn to $42.3bn at the end of 1978. Contrary to the Soviet Union, which recorded a high surplus with the LDCs, in these three years ($18.6bn for 1976/78), EE was only modestly successful in these markets: its surplus totaled only $2.5bn in 1976/78. In 1979 EE could reduce its deficit with the West to $5.4bn, unfortunately it was not able to maintain the surplus with the LDCs which decreased from $1bn (1978) to $0.3bn (1979), and consequently the overall deficit with the non-socialist countries in 1979 was only $0.4bn lower than in 1978.

As a consequence of the deflation policies adopted by the US and consequently by many West European governments, 1979 brought another strain for East European current accounts: the rising interest rates. High debt and high interest rates made interest payments the dominant outflow in the service balance. This expenditure could not be covered by the net revenues of the other service items. Under the double pressure from the trade and the service account a painful external adjustment, which would affect domestic economic performance, became inevitable.

Nevertheless 1980 was a transitional year with lukewarm adjustments only. Since East European exports to the West could be increased by 20.5%, no drastic import cut was regarded necessary. Imports decelerated but still grew by 8.6% (against 12.9% in 1979). But trade with LDCs was far from successful. The trade surplus of $300m in 1979 turned into a deficit of $400m in 1980 and therefore the total deficit in trade with non-socialist countries remained unbearably high at $4.1bn. Net debt increased further by $8.1bn and reached unprecedented $59.3bn by the end of 1980.

3. Adjustments in 1981 and 1982

The drastic change came in 1981 and 1982. Since exports to the nonsocialist countries stagnated (+0.4% in 1981; 0.0% in 1982), imports had to be vigorously reduced (−12.9% in 1981; −15.8% in 1982). This resulted for the first time after a decade in a trade surplus of $0.5bn in 1981 and $5.3bn in 1982. Because of the dollar appreciation net debt increased only slightly by $1.3bn (+2.2%) in 1981 and decreased by $4.3bn (−7.1%) to $56.3bn in 1982.

The overall surplus in 1981 is due to the surplus of $3.3bn in trade with the LDCs as a result of increasing exports by 20.5% and a cutback on imports by 20.6%. The deficit with the West was further reduced by $1bn to $2.7bn, due to a reduction of imports by 10.2%, which went beyond the decrease in exports (−7.5%).

In 1982, for the first time since 1970, Eastern Europe had an export surplus with the West ($1.7bn). While exports stagnated (+0.5%), imports were further restricted and decreased by 18.5%. The trade surplus with LDCs could be slightly increased to $3.6bn. This was the result of a further reduction in imports (−6.9%), while exports to LDCs could not be expanded (−1.6%).

Over the whole of 1981/82 EE could compensate its losses in the Western markets by an equal increase of exports to the LDC markets. The LDCs bore relatively the higher burden of EE's adjustment in their current account; they imported 18.5% more in 1982 than in 1980, and lost 26.1% of their exports to EE, while Western imports decreased by 7%, with exports being down by approximately the same magnitude (−26.8%) as the LDCs'.

The external adjustment made internal adjustments inevitable. For a variety of reasons the average annual growth rate of national income produced (NMP) of EE halved in the second half of the seventies (1971/75: 7.4%; 1976/80: 3.7%). Negative growth rates appeared in 1981 (−1.8%) and 1982 (−1.1%). They were due to Polands economic crisis, but the remaining 5 countries too showed lower growth rates than in the late seventies (1981: 2.6%; 1982: 1.9%). The effects of the adjustment process were even more profound on the national income used. In the seventies it increased faster and was bigger than national income produced, because of the inflow of goods. In the early eighties on the contrary the outflow of goods depressed growth rates of income used, which became smaller than the national income produced.

As usual in CPEs, the slowdown in overall economic growth was accompanied by a more pronounced slowdown in investment. Whereas investment showed higher growth rates than national income in the first half of the seventies, the reverse was true for the second half. In 1981 and 1982, moreover, investment decreased absolutely in all East European countries, with two exceptions in 1981: Bulgaria (+10.5%) and GDR (+1.3%).

This led to a reduced share of accumulation in national income (from some 30% in the mid-seventies to 20% in 1981). But the increased share of consumption did not mean a better living standard of the population. Real income increased only in Bulgaria (+3.5%), the GDR (+1.3%) and Hungary (+0.3%). It declined in the CSSR, Poland and Romania.

The decline in investment must not be seen as an entirely negative process. There are indications that the completion of projects was speeded up in almost all EE and consequently productive capacity suffered less than investment figures would lead one to suppose. In most of the East European countries annual investment exceeds 5% of the total stock of fixed assets. In summary the adjustment process was and is certainly painful, but also healthy.

IV. A SHORT CUT COUNTRY RANKING AS OF THE END OF 1982

Before turning to the perspectives of trade with Eastern Europe we have set up a short cut country ranking in order to find an adequate starting point for an assessment of our projections. Generally speaking, we would expect that a country with a smaller debt burden and better credit rating would be less exposed to restrictive measures than a country with a higher debt burden.

The first four indicators give a picture of the debt burden. In all these indicators Poland's position is the worst (Table 2).

TABLE 2.—EASTERN EUROPE: DEBT INDICATORS FOR 1982 AND COUNTRY RANKING

	Net debt in percent of exports to the West	Per capita net debt (U.S. dollars)	Net debt in percent of GNP [1]	Short term liabilities [2] in percent of exports to the West	Debt ranking [3]	Assets [4] in percent of imports from the West	Liquidity ranking [3]	Final ranking [3]
Bulgaria	141	199	4.4	85	2	52	1	1
CSSR	117	212	3.7	32	1	25	4	2
German Democratic Republic	166	663	8.6	52	3	35	2	3
Hungary	267	657	15.0	85	5	23	5	4
Poland	649	656	21.2	125	6	33	3	6
Romania	268	417	17.2	47	4	18	6	5
Eastern Europe	274	510	12.0	68		31		

[1] GNP according to World Bank Atlas; WIIW update with NMP growth rates.

[2] Liabilities of up to one year with commercial banks reporting to BIS (maturity distribution end 1982); BIS, 1983.

[3] Best = 1.

[4] Assets with commercial banks reporting to BIS.

(1) Net debt in percent of exports to the industrialized West

Hungary and Romania show very high ratios, whereas Bulgaria and above all Czechoslovakia are in a much better position. Compared with 1981 only Poland's indicator worsened (634% in 1981), but no country recorded substantial improvements.

(2) Per capita net debt

The GDR, Hungary and Poland show almost the same figure, approximately $660 per inhabitant. Romania with $417 is in the middle of the group, whereas Bulgaria and the CSSR are on the lower end with appr. $200. Due to the adjustments made in 1982 this indicator decreased in all countries. Per capita net debt went down by 20% in Bulgaria, followed by the GDR (−11%), Hungary

(−10%) and the CSSR (−8%). In Romania and Poland[8] it decreased only by 5%.

(3) Net debt in percent of the GNP[9]

Contrary to what the first two indicators show, Romania's situation seems to be more critical at 17.2%. This is the second worst rank after Poland at 21.2% and before Hungary at 15%. The GDR's indicator, at 8.6%, is roughly twice as high as that of Bulgaria (4.4%) or Czechoslovakia (3.7%). This indicator improved for all countries with the exception of Poland.

(4) Short term liabilities with Western banks in percent of exports to the industrial West

The most favourable ratios are recorded by Czechoslovakia (32%) and Romania (47%), followed by the GDR (52%). Both Bulgaria and Hungary have the relatively high ratio of 85% and Poland is the only country with more than 100%.

In comparison with 1981 the ratio increased slightly for Romania (1981: 44%) and even more for Bulgaria (1981: 74%). The other countries show a decrease of the ratio: Hungary from 120% to 85%, the GDR from 82% to 52%, the CSSR from 43% to 32% and even Poland from 142% to 125%.

For all countries the share of liabilities vis-à-vis Western banks in total gross debt declined in 1982 compared with 1981. In Bulgaria from 78% to 74%, in the CSSR from 76% to 71%, in the GDR from 73% to 68%, in Hungary from 89% to 87%, in Poland from 60% to 56% and in Romania from 50% to 43%. This decrease could inter alia explain the improvements of the indicator. In Bulgaria and Romania the maturity structure according to BIS data worsened.

From these four indicators the following country ranking is derived: Czechoslovakia holds the best rank, followed by Bulgaria and the GDR. Romania takes rank four, immediately followed by Hungary which gets rank five. Poland is placed last.

Assets with Western commercial banks in percent of imports from the West is the only indicator of the liquidity position which can be calculated for all six countries. Of course these countries may also hold assets at other places, but no information is available. It must, however, be assumed that these assets are all liquid, an assumption which cannot be checked, as the maturity distribution of the assets is not published by the BIS.

With assets covering six months of imports, Bulgaria seems to be in a comfortable position, followed by the GDR and Poland (after downscaling imports substantially) with enough assets to pay for four months' imports. The critical mark of assets equal to three months of imports is just met by Czechoslovakia, whereas Hungary falls slightly short of it. Romania is in the worst position in this ranking, with assets just sufficient to pay for two months' imports.

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[8] Here we must add that interest on government guaranteed credits due in 1982 but not paid is not included in Poland's official debt statistics and apparently also not in the estimates by Miller and Barclay. Otherwise this indicator would go up.

[9] Estimating GNP levels of CMEA countries is an art. So far no estimate has been published which finds unanimous acceptance, e.g. the World Bank Atlas data are believed very likely to underestimate the Hungarian and the Romanian GNP. If this is true, the ratio of debt to GNP for Romania and Hungary is overestimated.

Compared with the previous year Bulgaria (1981: 39%), Poland (18%) and Romania (9%) improved their liquidity position. The last two have drastically cut back their imports from the West in 1982. The ratio deteriorated appreciably for the CSSR (34%) and only slightly for the GDR (38%) and Hungary (26%).

We finally arrive at a total ranking which, in addition to the five indicators, also took into account that Poland and Romania were not in a postion to service their debt in 1981–1983 and had to ask for rescheduling. The first rank is given to Bulgaria, followed by the CSSR, the GDR and Hungary. Romania is accorded rank five, because it could at least pay the interest and part of the maturing debt, while Poland is still not in a position to pay the interest due.

V. Two Scenarios of East-West Trade up to 1990

1. The philosophy of the projections

We do not intend to make forecasts. Our aim is to choose a set of variations in strategic assumptions that allows us to explore the possible consequences of

(a) variations in the average pace of economic growth in the West—

(b) variations in the kind of credit policy pursued by Western lenders vis-à-vis Eastern borrowers—

on the perspectives for exports to the East and on the East European countries' indebtedness.

We do not take into consideration any abrupt changes in the political relations between East and West, which may, as the past has shown, have a rather strong impact on the development of trade. Furthermore, in order to make the consequences of adopted policies visible we do not introduce any variation in policies throughout the projection period 1983–1990. This, of course, is an assumption which is rather distant from reality, but only this assumption helps us to assess the longterm consequences of a given policy. If a variable, e.g., imports or debt, turns negative, this simply means that such a projection is not feasible or is not likely to be pursued over more than a limited number of years.

(A) OECD GROWTH AND IMPORTS FROM EASTERN EUROPE

Between 1960 and 1981 regression analysis shows a relatively close relationship between total OECD imports (in real terms) and OECD growth (in real terms). We estimate the following equation ($r^2=.742$):

$$m=-4.306+2.923\ y,$$

where m=real rate of growth of imports and y=real rate of growth of GDP.

This equation shows a significant impact of fluctuations in economic growth on the propensity to import. In a period of a cyclical upswing imports are growing significantly faster than GDP (e.g., at 4% growth of GDP imports grow by 7.4%), while in the phase of downswing imports grow more slowly or even decline (see Table 3).

TABLE 3.—ESTIMATED RELATIONSHIP BETWEEN THE GROWTH RATES OF GDP AND TOTAL IMPORTS AT CONSTANT PRICES IN THE OECD AREA

GDP growth rate [1]	1	1	1.5	2	3	4	5
Import growth rate [1]	−4.3	−1.4	0.	1.5	4.5	7.4	10.3

[1] In percent.

This observation is in line with the findings by Bond and Klein [10] that the average elasticity of OECD imports to OECD growth was 1.5, because in the period 1960–1981 average OECD growth was appr. 3% p.a. We must, however, also cope with the question how far the estimated equation would be valid in a future with slow growth or long term stagnation. The above equation, which shows an acceleration between growth of GDP and imports works via either the buildup or the depletion of stocks (inventories). In an upswing stocks will be built up, thus imports grow faster than production, in the downswing stocks are depleted, thus imports grow slower. For a longer period of economic stagnation we have to assume that the process of depletion of stocks has already come to an end, therefore irrespective of a stagnation or a modest growth (of up to 1.5% p.a.) imports will not drop further, but rather remain constant at the 1982 level throughout the projection period.

OECD imports from the East are not only determined by the overall propensity of the OECD economies to import. Competitiveness of Eastern Europe, which can be measured in the change in its market shares, also plays an important role.

In the period 1970 to 1982 EE market shares in the OECD imports went down from 1.56% to 1.15% (without Poland from 1.09% to 0.88%). If one assumes, as an upper limit, a 3% GDP growth in the OECD and a continuation of the 1970/82 trend of the market shares [11] for each country, the following picture would emerge:

Hungary would increase its exports (at constant prices) to the OECD by 2.3%, the CSSR by 1.0% and Bulgaria by 0.8%. Poland's exports would decline by 1.7%. The GDR's exports would go up by 4.1%, but the trend equation is strongly influenced by the oil product exports in 1981 and 1982. If the trend is calculated for 1970 to 1979 the export increase would be only 2.1%. For Romania the trend equation is statistically not significant; this is also due to heavy fluctuations in the exports of oil products.

It remains to be seen whether Poland will be able to regain its market share, but it seems improbable that exports will continue to decrease by an average rate of 1.7% a year.

In the past market shares were lost mainly with food and agricultural products, but these will not play a major role in the future exports of EE to the OECD (except Bulgaria and Hungary). On the contrary, market shares of manufactured goods, energy and fuels could be maintained and in some cases even increased. Since all countries of EE try hard to increase their exports to the West, we assume in our projections that the OECD imports from EE will grow at the same rate as total OECD imports,[12] that is:

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[10] Bond and Klein, 1983.

[11] The equations are given in the annex B.

In variants A (at 3% GDP growth) by 4.5% at constant and 8.6% at current prices;

In variant B (at 0–1.5% GDP growth) by 0% at constant and 4.0% at current prices.

(B) CREDIT POLICIES

After the reschedulings of Poland and Romania, and some rescue activities and stand-bys for Romania and Hungary the development of the debt is no longer determined solely by the financial needs of the East European countries, but rather by the willingness and ability of the international banking community to provide finance for the East Europeans.

For building up our scenarios we shall start from the assumption that the principal due of the respective year is refinanced to 100% with three years credits.[13] This policy implies a constant gross debt (Variant A1). Under present economic conditions and political tensions between East and West this can be regarded as a "liberal" credit policy. An extension of the total amount of credits supplied to the East seems to be unrealistic in view of Western attitudes towards lending to the East, but also in view of official declarations of high rank politicians in EE (CSSR, GDR, Hungary, Romania). These countries feel exposed to possible extortions by the West and attempt to reduce their financial dependence.

From the Romanian experience we know that assets should be kept in a certain relation to imports in order to make possible smooth payment for imports and servicing the debt. We have learned from Western bankers that in Western countries with a relatively low debt a ratio of reserves to imports of approximately 25% (3 months of imports) is regarded as a minimum. Therefore we assume that for the more indebted East European countries the minimum ratio of assets to imports should be 30%. If a country (e.g. Romania) has not sufficient reserves it will have to build them up. For other countries, reporting higher ratios of assets to imports, we assume that this is just the ratio which guarantees smooth debt servicing of this country in the future. Assets should be maintained at a level which keeps the asset/import ratio constant.[14]

A variant of refinancing only 70% (variant A2) of the principal due, that is, a *tight credit policy,* must be seen as a genuine alternative to the 100% variant. It can be interpreted as a "credit squeeze policy" of the West on the one hand. On the other hand it can also be seen as the outcome of a deliberate policy of East European countries to reduce their debt and with it part of their dependence on the West. This line of thought was expressed in various statements of politicians and government members from countries like Romania, CSSR, the GDR and Hungary.

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[12] Of course, this remains to be seen. However, when analyzing the period 1970–1982 we have the impression that Eastern Europe's success on Western markets also depends on the Western business cycle. During the exceptional boom in the early 70s the East European countries, on average, have gained in market shares, also (excluding Poland) during 1977–79.

[13] This of course has a strong impact on future maturities. With constant gross debt and refinancing through 3-years credits only, 50% of total gross debt will, in the long run, fall due each year. Nevertheless this assumption may be unrealistically favourable, because it implies that short term money also is refinanced by three years credits. Thus in our model the projected debt service ratios (table 6) have to be considered as the lower limit.

[14] The asset/import ratio is calculated with respect to the imports from the West.

In the light of this, variant A3 with 110% new credits over principal due, that is expansion of gross debt, might seem to be a futile exercise. If it is hardly realistic for the next two or three years it could be a realistic alternative for some countries in the second half of the eighties.

2. The four variants of projections

We have set up two sets of variants of the model:

Variants A1, A2 and A3 assume that imports from the West are a residuum given the growth of the other items of the current account and the financial constraints.

In variant B the growth rates of all current account items (including imports from the West) are assumed to remain constant at real terms, prices increase by 4%. The calculated current account balance of the respective years determines the change in net debt and, after inclusion of required change in assets, the total of new credits needed. Only one version is presented.

(1) HIGH GROWTH SCENARIO: VARIANTS A1, A2 AND A3

The assumptions on growth rates and on the interest rate determine all items of the current account except the imports from the West.

Underlying the variants A is a real GDP growth rate for the OECD area of 3% annually which implies a real growth of imports at 4.5% p.a. during 1983–1990. It is a high growth scenario.

Because of the assumed rate of inflation of 4% p.a. imports from the East (= East European exports to the West) grow by 8.6% annually in nominal terms. Net other services grow by the same rate as the exports to the West.

Given the interest rate, which we assume to be 10%, the net interest payments are calculated from the average net debt: (amount per 1.1 + amount per 12.31.).

In this scenario the credit policy and the required amount of assets determine the projected current account balance.

The term "credit policy" was made operational by defining the share of the principal due to be refinanced by new credits in the respective year. Three versions of variant A, depending on credit policy, are considered in detail:

A1: "liberal": new credits = 100% of principal due;
A2: "tight": new credits = 70% of principal due;
A3: "concessionary": new credits = 110% of principal due.

In each case the new credits are to be repaid in the following three years in equal instalments. Because of the unfavourable effect of 3-years repayment on the ratio of principal due to gross debt the tight credit policy is accelerating its effect during the projection period.

If imports from the West are projected to increase, the assets must maintain a certain relation to these imports. The required ratio is 30% for the CSSR, Hungary and Romania, 33% for Poland, 35% for the GDR and 53% for Bulgaria. For the last 3 countries the ratio corresponds to the 1982 figures. For the first 3 countries the ratio was 25%, 24% and 18% respectively in 1982.

In variant A1 a current account surplus is needed for financing the required increase in assets due to rising imports. Gross debt remains constant while net debt declines by the amount of asset increase.

In variant A2 a current account surplus is needed for both the repayment of 30% of the principal due in the respective year and the required increase in assets. Gross debt and net debt decline.

In variant A3 the extension of more new credits than needed for repaying the principal due in the respective year allows a current account deficit of the same amount. But actually this amount cannot be fully used for increasing imports as a part of it is needed for the asset increase. Gross debt goes up, as in the long run does net debt.

With the current account balance and the other items of the current account determined, the imports from the West are calculated as a residuum.

(2) LOW GROWTH SCENARIO: VARIANT B

In this scenario it was assumed that all items of the current account grow by 4% a year, implying that exports and imports remain constant in real terms. According to our considerations zero real growth of the exports to the West corresponds to a real GDP growth rate of 0%–1.5% in the OECD area.

Given the growth rate of the different items, the current account balance is determined and with it the change in net debt. As in variants A the change in assets is given by the required ratio of assets to imports from the West. Change in assets and in net debt add up to the change in gross debt and therefore the additional amount of new credits needed for servicing the principal due.

This variant follows the logic of previous models used for projections of East-West-trade.[15] There is no assumption that availability of credits may be limited, but, since the starting point of this model is in our case 1982, it is rather a model showing how far the adjustment process of 1981/82 was sufficient for getting control over the development of the debt.

3. The results

(A) OVERVIEW

The results show very similar patterns for all countries,[16] with the exception of Poland. The main features can be summarized as follows:

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[15] Askanas, Fink and Levcik, 1979 and 1980.

[16] See Graphs 1 to 6 and Tables 4 and 5.

TABLE 4.—PROJECTED DEVELOPMENT OF EASTERN EUROPE'S IMPORTS FROM THE WEST IN VARIANTS A1, A2 AND A3

[Annual percentage change [1]]

	1983			Average 1985/90		
	A1	A2	A3	A1	A2	A3
Bulgaria	8.6	−3.0	16.1	7.9	9.4	7.7
Czechoslovakia	3.5	−5.9	6.7	8.9	9.8	8.9
German Democratic Republic	26.6	7.2	33.1	9.6	11.2	9.5
Hungary	5.5	−12.3	11.5	8.5	10.3	8.4
Poland	−30.5	−86.3	−11.9	15.2	29.6	13.9
Romania	26.8	7.0	33.3	10.6	13.3	10.5
CMEA 5 [2]	17.6	−0.5	21.7	9.3	10.9	9.2

[1] At current prices, including 4% rate of inflation.

[2] Excluding Poland.

TABLE 5.—PROJECTIONS OF EASTERN EUROPE'S NET DEBT IN 1985 AND 1990 AS PERCENTAGE OF THE 1982 LEVEL

	1985				1990			
	A1	A2	A3	B	A1	A2	A3	B
Bulgaria	82	37	99	60	47	([1])	111	([1])
Czechoslovakia	88	65	98	97	70	([1])	111	78
German Democratic Republic	90	62	104	53	73	([1])	117	([1])
Hungary	93	69	102	90	84	13	123	53
Poland	101	80	109	123	97	32	133	177
Romania	92	76	99	72	85	22	118	([1])
CMEA 5 [2]	91	66	100	71	77	4	118	([1])

[1] According to this variant this country turns into a net creditor position before 1990.

[2] Excluding Poland.

In 1983/84 an adjustment process occurs, which in variants A1 and A2 mostly means cutting down imports or lowering growth rates of imports from the West than in the following years.

In the long run the growth rates of exports and imports are rather similar.

The imports from the West by 1990 are at almost the same level in variants A1, A2 and A3, irrespective of the short term adjustments needed in 1983/84.

Depending on the rate of growth which can be achieved in East European exports to the West (Variants A1 and B) the levels of imports by 1990 are very different. This leads to the conclusion: if there is business in the West then there will be business in the East too.

Because of liquidity problems in recent years and the increasing difficulties in short term re-refinancing we included in our calculations of the debt service ratio also short term debt (Table 6). Even assuming that all payments due (including short term debt) are refinanced by three years credits, this ratio is projected to remain very high throughout the projection period in all countries with the exception of Czechoslovakia. The relatively good position of Romania in 1983 and 1984 can be explained by the effects of rescheduling its debt.

This delicate liquidity situation demands both an appropriate debt management policy on the part of Eastern European countries and readiness to cooperate with them on the part of Western lenders. Ill-considered policies of only a few of the lenders could bring any Eastern European country into severe difficulties.

(1) Variant A1

In this variant gross debt does not change; each year's principal due is refinanced at 100%. The current account must show a surplus equal to the required increase of assets.

Leaving aside Poland,[17] which is a special case, imports from the West according to this variant could grow at least modestly in the other 5 countries already in 1983. Since the current account surplus in 1982 was already higher in the GDR and in Romania than that required in 1983, resources could be shifted to imports and allow high import growth rates. In the second half of the eighties imports grow, on average, at rates varying from 7.9% (Bulgaria) to 10.6% (Romania).

TABLE 6.—EASTERN EUROPE: PROJECTED DEBT SERVICE RATIOS INCLUDING SHORT TERM DEBT IN PERCENT: VARIANT A1 [1]

	1982	1983	1984	1985	1986	1987	1988	1989	1990
Bulgaria:									
Total	67	59	39	37	44	40	38	38	35
West	136	118	76	70	82	72	68	67	61
Czechoslovakia:									
Total	56	40	25	32	37	36	36	37	35
West	74	52	32	40	47	45	45	45	42
German Democratic Republic:									
Total	100	74	50	53	61	58	56	56	52
West	115	85	57	60	69	65	63	63	58
Hungary:									
Total	119	81	61	64	75	73	72	73	69
West	170	115	85	89	103	99	96	96	90
Poland:									
Total	235	189	126	150	175	170	170	173	163
West	334	265	175	206	237	227	225	227	212
Romania:									
Total	72	41	37	48	55	57	60	57	55
West	128	72	64	81	91	93	95	90	85
Eastern Europe excluding Poland:									
Total	85	60	43	48	56	55	55	54	51
West	121	84	60	66	76	73	72	71	66

[1] Total: debt service in percentage of total convertible currency exports. West: debt service in percentage of exports to the West.

Until 1985 net debt of all 5 countries together declines to some 90% of the 1982 level. Until 1985 some $10bn are needed each year for refinancing, but this sum goes up to $19bn by the end of the decade.

(2) Variant A2

In this variant gross debt is reduced, since, according to our assumption, only 70% of the principal due is refinanced. Consequently substantial current account surpluses are needed (for the 5 countries together appr. $4bn per year).

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[17] We excluded Poland from the aggregate presentation, because the results for Poland are completely different from those achieved for the other 5 East European countries (see table 6).

According to this variant the need to increase the aggregate current account surplus from $1.5bn in 1982 to $4.2bn in 1983 forces all countries with the exception of the GDR (+7.2%) and Romania (+7.0%) to decrease their imports from the West in 1983. While this variant is economically not feasible for Poland (−86.3), the greatest adjustment would take place in Hungary (−12.3%), followed by the CSSR (−5.9%) and Bulgaria (−3.0%). In the second half of the eighties growth rates between 9.5% (Bulgaria) and 13.3% (Romania) are projected. Compared with variant A1 these growth rates are higher, but the absolute levels of imports from the West are below A1, although the levels converge pretty closely by the end of the decade.

In 1985 net debt on average is one third below the 1982 level. During 1983/1990 $7bn of new credits for refinancing is needed on annual average.

(3) Variant A3

In this variant new credits exceed the principal due in the respective year by 10%. Gross debt of the five countries goes up by 36.4% from $37.4bn in 1982 to $51.0bn in 1990; but net debt increases only by 17.8% from $32.5bn (1982) to $38.3bn (1990).

From the point of view of East-West trade this variant is clearly the most interesting. Imports from the West go up in all countries in 1983 and in the second half of the eighties the growth rates vary between 7.7% (Bulgaria) and 10.6% (Romania). Although these growth rates are much the same as in variant A1, the level of imports is above the A1 level because of the jump in imports in 1983.

The aggregated current account balance is in surplus in 1983 ($0.5bn), and becomes negative in 1984. The deficit rises from $0.1bn in 1984 to $1.4bn in 1990. On the average new credits of $12.4bn per year are needed in 1983/85. The needs for refinancing rise from $18.2bn in 1986 to $26.8bn in 1990, with an annual average of $22.5bn for 1986/90.

(4) Variant B

In this variant trade and other services are projected with zero real growth and a 4% annual growth at current prices. In 1982 the trade balance in hard currencies in all 5 countries (EE excl. Poland) shows a surplus, which is maintained throughout the projection period and leads to a current account surplus in all countries. This current account surplus goes up from $2.6bn in 1983 to $7.8bn in 1990. Consequently net debt declines rapidly and turns into net credits by 1990. The decline of the net debt reduces interest payments and thus alleviates the current account. By 1985 the level of net debt as a percentage of the 1982 level is 53% for the GDR, 60% for Bulgaria, 72% for Romania, but 90% for Hungary and even 97% for the CSSR.

As in this projection the current account surplus exceeds the need of the assets buildup, gross debt declines to $0.9bn in 1990. The variant seems to look bright from the point of view of solving the debt problems. But two remarks must be made concerning the appropriateness of this variant:

(1) The absolute levels of the imports are very low compared with the variants A. It is an open question how far the heavy reduction

of imports in 1981 and 1982 already affected the productive capacity of EE. Freezing imports at the low 1982 levels could well be insupportable from the point of view of the internal functioning of the East European economies.

2) The outcome described above depends crucially also on the surpluses achieved in trade with the LDCs. But can these surpluses be maintained in a climate of world economic stagnation, taking into account the external problems of the LDCs?

(B) RESULTS BY COUNTRY

(1) Bulgaria

Due to its high surplus in trade with the LDCs, which compensates the trade deficit with the West, Bulgaria is in a relatively good position. If it can maintain this surplus, imports from the West can grow at rates between 7.7% and 9.4% a year in 1985/90. A reduction of available credits (A2) would make necessary a slight reduction (−3%) of the imports from the West, but after this adjustment imports could grow fairly steadily. Net debt could turn into net credits in 1987, indicating that there is much room for other policies. The main reasons for this are the relatively low level of net debt ($1.8bn in 1982) and the high assets ($1bn in 1982) which represent 53% of imports from the West.

The different high growth scenarios show a vanishing surplus of the hard currency trade, which does not lead to current account problems because of declining interest payments and the slight surplus of the other services. Because of the low magnitude of the debt a somewhat higher interest rate would not seriously affect Bulgaria's import capacity.

Losses in the LDC markets would, however, radically change the otherwise unproblematic picture of Bulgaria's current account.

In variant B Bulgaria needs 89% refinancing in 1983 ($1.3bn) and 79% ($0.9bn) in 1984. This percentage declines to 38% in 1989. After 1990 net debt according to this projection could have turned into net credits.

(2) Czechoslovakia

The conditions for the CSSR in 1982 are not favourable in two respects: Czechoslovakia has a modest current account deficit ($79m) and a low ratio of assets to imports (25%). This means the import growth rates are projected to be low in 1983: 3.5% in variant A1 and 6.7% in variant A3. In variant A2 imports are projected to decline by 5.9% and the trade balance with the West becomes positive. After these adjustments imports can grow by rates from 8.9% to 9.8% in 1985/90. Net debt would be slightly reduced in variant A1.

In variant B, contrary to what is projected for the other countries (with the exception of Poland) net debt in 1990 is only 22% lower than in 1982; because of the relatively low debt a more pronounced reduction actually does not seem necessary. This is explained by the fact that interest payments equal approximately the total trade surplus, and the assumed net receipts from other services are particularly low. In this variant the refinancing needs are high: $1.4bn in 1983, $0.8bn in 1984 and $1.2bn in 1985. After 1985 on the average $1.8bn per year.

On the whole the situation of the CSSR is not dramatic, but depends to a large extent on the trade surplus with the LDCs.

(3) The German Democratic Republic

As far as the current account is concerned, 1982 seems to be a good starting position for the GDR: according to incomplete information a high trade surplus with the West ($1.1bn), a trade surplus with the LDCs ($0.3bn) and a sizeable surplus in transfers and other services ($1bn) can be assumed. The trade surplus is only due to the adjustments made in 1982. If the information for 1982 is right, according to variant A these adjustments prove to be sufficient for letting imports from the West grow, beginning with 1983. Even in the case of restricted credits (A2) imports could go up by 7.2% in 1983. In the second half of the eighties import growth rates between 9.4% and 11.2% are projected.

In variant A1 the surplus of 1982 is projected to turn into a growing trade deficit with the West from $0.2bn in 1984 to $1.1bn in 1990. In variant A2 the surplus with the West is projected to decline until 1987 (zero trade balance). In the following years deficits go up: from $0.3bn in 1988 to $0.6bn in 1989 and $1bn in 1990. However, in the projection these deficits are largely compensated by the rising surpluses in trade with the LDCs and projected increases of transfers and net other services. These assumed growth rates for these items are, of course, a weak point in our projections, a modest downward variation would make the picture less bright.

If variant A1 is calculated with an interest rate of 12% instead of 10%, the GDR's imports from the West over 1983/90 are projected to be lower by $1.5bn, that is by $0.2bn less every year.

Variant B projects a rapidly declining net debt because of the substantial surplus in 1982 and decreasing interest payments. Total refinancing needs would be $7.1bn for the period 1983 to 1986, of which $3.7bn in 1983. After 1986 the current account surpluses are sufficient to servicing the debt. Net debt is projected to become negative in 1988 and gross debt in 1989, indicating that this scenario becomes unrealistic probably after 1985.

On the whole we get a mixed picture. On the one hand the projected debt service ratio is high: 74% of total exports to the West and LDCs in 1983. Therefore, our assumptions on smooth refinancing of maturities by 70–110% may be too optimistic. The GDR will have to employ all skills to manage the money flows and to raise new credits of $4bn or more which shall replace the maturing debts.

On the other hand the projected current account of the GDR looks rather sound. But we have to keep in mind the strong dependence of the GDR imports from the West on the future development of the already very high transfers (other services net) to the GDR and on maintaining the trade surplus with LDCs.

Having managed the even higher debt service of 1982 the GDR should be able to manage the debt service in the future, provided that the GDR does not return to a policy of excessively high growth rates, which would soon destabilize the external equilibrium and may lead to extreme fluctuations (stop/go) in imports from the West.

(4) Hungary

Hungary recorded a trade deficit with the West in 1982 ($0.6bn) and high interest payments. The convertible currency surplus with the LDCs and with the CMEA countries together with the tiny surplus on the other services could not compensate for the net outflows. The current account deficit was $139m in 1982.

Beginning with 1983 imports from the West can grow according to all variants except in the credit restriction variant (A2), which requires a further cutback in imports in 1983 (12.3%) after the reduction of imports from the West in 1981 (1.1%) and 1982 (12.3%). In the second half of the eighties the imports from the West are projected to grow by rates between 8.4% and 10.3%. Trade deficits with the West are projected to some $1bn by the end of the decade. However, the debt service ratio (including short term debt) is projected to remain high in variant A1 (Table 5).

Net debt goes down very slowly in variant A1; its level in 1990 is 84% of that in 1982. This is mainly due to the assumption that the low ratio of assets to the imports from the West (30%) will be sufficient for maintaining regular payments.

Hungary would be affected by an increase of the interest rate from 10% to 12%. In variant A1 the projected imports would, on average, be lower every year by $130m, that is $1bn over 1983/90.

In variant B net debt in 1990 is 53% of the 1982 level, that is relatively higher than in most other countries, but still lower than in the CSSR. The refinancing needs will be $2.2bn a year on average for 1983/85 and $2.6bn a year for 1986/1990.

On the whole, despite high debt service, the outlook for Hungary seems not to be bad, but the open question is whether the convertible currency surplus with the LDCs and especially with the CMEA countries (namely USSR) can be maintained. Therefore a further reduction of imports from the West during 1983 and possibly also in 1984 can be expected.

(5) Poland

Maintaining its 1982 market share in the West throughout the projection period does not provide a solution to Poland's external problems. Polish imports from the West were $6.7bn in 1980, in 1981 $4.5bn and in 1982 $3.2bn; in 1983 they are projected at $2.2bn according to variant A1, $0.4bn according to variant A2 and $2.8bn in variant A3. None of these variants provide an economically viable solution, all would imply a further disastrous strain on the Polish economy. Variant A2 projects a situation where it would be worthwhile for Poland to declare default. Importing only against cash payment would allow higher imports than variant 2.

Poland is the country on which a rise of the interest rate from 10% to 12% in variant A1 would have the strongest impact: annual imports from the West would be lower by roughly $0.5bn ($3.8bn for 1983/90).

Variant B leads to continuous current account deficits which increase net debt from $23.8bn in 1982 to $41.9bn in 1990, that is by $18.1bn.

From these negative results two conclusions can be drawn:

(a) Poland must regain the export market shares in the West which it had in the mid-seventies, namely appr. 0.5%. Without this fundamental change a feasible economic solution to the crisis cannot be found.

(b) Financial solutions must be found which facilitate and support the return to a solid export basis of the Polish economy.

But finally we must stress that economic stability can hardly be achieved without a solution of the internal political problems of Poland.

(6) Romania

Like the GDR, Romania has achieved a relatively favorable current account through the adjustments it made through 1981 and 1982. Because of the trade surplus with the West of $1.4bn in 1982 and a current account surplus of nearly $0.7bn in the same year imports from the West according to the projections can grow again beginning with 1983, even in case of credit rationing (variant A2).

Net debt in 1990 is 85% of the 1982 level in variant A1 and 22% in variant A2. Variant A1 projects a reduction of the debt service ratio (including short term debt) in 1983 and 1984, but an increase in the second half of the decade indicating that liquidity problems may again become more severe at the end of the decade.

If the interest rate went up from 10% to 12%, the effect in variant A1 on the Romanian capacity to import from the West would be felt: over 1983/90 these imports would be lower by $1.4bn, that is, on the average by $170m annually.

Variant B projects a net creditor position of Romania in 1990. The increasing current account surplus is the result of the high initial (1982) trade surplus and the declining interest payments. Refinancing amounts to $1.1bn a year on average for 1983/88. In 1989 debt service is projected to be entirely financed by the current account surplus.

The current account surplus could also allow Romania to build up higher reserves than 30% of the imports from the West and to pursue a more adequate liquidity policy than in previous years.

The debt reschedulings in 1981–82 apparently were a consequence of inadequate liquidity. The cutback on imports which improved the asset/import ratio in 1982 was not sufficient to put the servicing of the debt on a sound basis. With the 1983 rescheduling and with continued attempts to build up reserves, however, debt servicing should be manageable in the future, given a reasonable policy of the Romanian authorities and support by Western banks.

On the whole Romania seems to have a good starting position, the crucial question being its competitiveness on Western markets and its capability to increase its surplus with LDCs. Because of lack of profitability, the Romanian government intends to cut imports of crude oil for refining and exporting oil products. In our projections this policy is not taken into account, because we do not know the extent to which it will actually be put into effect. It will however decrease imports from LDCs and exports to the West. This will lead to a higher surplus in trade with LDCs and to a lower surplus (approximately by the same or a somewhat smaller amount) in trade with the West.

ANNEX

A. *Exogeneous Variables and Assumptions*

1. CURRENT ACCOUNT 1982 [1]

(a) Trade data

The trade data were taken from national sources with the following exceptions and/or adjustments:

GDR.— Official sources give the trade turnover separately for industrialized countries and LDCs, but exports and imports for total non-socialist countries only. The turnover with industrialized countries was split into exports and imports according to export and import data for 1982 published by UNCTAD (TD/B/965/Add.1). The LDC trade could then be calculated as a residuum.

Romania.—For trade with the West the data were taken directly from the Memorandum of February 1983.

LDC trade.—Two thirds of the surplus reported by official sources of Bulgaria and the CSSR and of the estimated surplus for the GDR were taken as surplus in convertible currency trade. The reason for this is, that the whole surplus with LDCs cannot be considered as available hard-currencies inflows. In a recent UNCTAD study it is stressed that, "On the whole, the positive trade balance of the socialist countries of Eastern Europe is to a considerable degree a function of the deliveries of capital goods and related services on a long-term credit basis extended to the developing countries . . . The assistance includes: concessional credits, grants, aid in the form of services by experts from socialist countries under most concessional conditions, aid in training national personnel practically without compensation and the value of concessions to the developing countries in foreign trade and transport." (UNCTAD, 1983a, p. 20 and 24).

It must be stressed that our estimate of the current account deficit of the CSSR is due to our assumption on LDC trade. If the entire LDC trade were taken into account Czechoslovakia would have a current account surplus of $130m in 1982. This would be in line with the declarations of high Czechoslovak officials, who say that the CSSR reached a current account surplus.

For Hungary, Poland and Romania the balance in LDC trade was calculated as the difference between the trade data with the West plus the service balance data taken from the official balance of payments statistics and the reported total balance on current account. Therefore this balance includes convertible trade with socialist countries (mainly USSR) and adjustments due to the differences in balance of payments and trade statistics.

Official customs statistics and balance of payments statistics give different pictures of the trade situation. In Poland the trade balance given by the customs statistics is more favorable, in Hungary more unfavorable than in the balance of payments statistics. In Romania both statistical sources give similar results.

(b) Service account

Official data on the convertible currency balance of payment were used for Hungary, Poland and Romania.

For the other countries net interest payments were calculated by taking 12% of the average net debt. Net other services were estimated.

2. DEBT DATA

The gross and net debt data for 1982 were provided by Miller and Barclay. Some of the data would need further discussion, e.g. in case of Poland the data correspond to official Polish statistics where non-paid interest on government guaranteed credits in 1981 and 1982 is not included (see Fink 1983a). Such variations in data, however, have rather little effect on the general conclusions which can be drawn from the projections.

Assets are taken from BIS statistics.

3. MATURITY DISTRIBUTION

The maturity distribution for Romania was taken from the Memorandum of February 1983 and adjusted for the rescheduling of 1983.

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[1] See Table B.1.

For all other countries the maturity distribution published by BIS provided the basis for an estimation. For 1983 and 1984 the percentages taken from BIS were applied to gross debt. The remainder of gross debt (maturities over two years) was assumed to have the following maturities: 20% in 1985, 1986 and 1987; 15% in 1988 and 1989; and 10% in 1990.

4. DEBT SERVICE RATIO

Principal due in the debt service ratio includes short term debt as well as medium and long term debt.

For 1982 principal due was calculated by applying the percentage share of the maturity up to and including one year in total liabilities vis-à-vis Western banks according to BIS to total gross debt.

5. OTHER EXOGENOUS VARIABLES

Real GDP growth rate for the OECD area during 1983/90 in variant A: 3% annually; inflation rate 1983/90: 4% annually. Interest rate: 10% annually for all countries in 1983/90. Ratio of assets to the imports from the West for 1983/90: 30 % for the CSSR, Hungary and Romania. The same ratio as in 1982 for the other countries.

B. Tables

TABLE B.1.—EASTERN EUROPE: 1982 CONVERTIBLE CURRENCY ACCOUNT AND DEBT PER END OF YEAR

[Millions of U.S. dollars]

	Bulgaria	C.S.S.R.	German Democratic Republic	Hungary	Poland	Romania
Exports to the West	1,260	2,794	6,688	2,638	3,662	3,509
Imports from the West	1,913	2,938	5,614	3,219	3,168	2,060
Trade balance with the West	−653	−144	1,074	−581	494	1,449
Trade balance with the LDC's [1]	853	422	331	1,351	−136	76
Interest payments net	−242	−407	−1,415	−970	−3,013	−917
Other services net	150	50	1,000	61	403	47
Current account balance	108	−79	990	−139	−2,252	655
Gross debt	2,782	3,998	13,077	7,800	24,800	9,766
Net debt	1,772	3,256	11,091	7,031	23,755	9,395

[1] Including adjustments and convertible currency trade with socialist countries in Hungary, Poland, and Romania.

TABLE B.2.1.—TRADE OF EAST EUROPEAN COUNTRIES WITH INDUSTRIAL WEST

[In millions of U.S. dollars]

	1970	1971	1972	1973	1974	1975	1976
Bulgaria:							
Exports	285	301	343	441	448	434	562
Imports	350	357	384	518	974	1,278	1,037
Balance	−65	−56	−41	−77	−526	−844	−475
C.S.S.R.:							
Exports	772	846	962	1,317	1,690	1,658	1,647
Imports	905	993	1,084	1,557	2,086	2,237	2,420
Balance	−133	−146	−122	−240	−395	−579	−774
German Democratic Republic:							
Exports	1,003	1,070	1,296	1,726	2,393	2,260	2,761
Imports	1,296	1,374	1,818	2,557	3,294	3,274	4,196
Balance	−293	−304	−522	−831	−901	−1,014	−1,436
Hungary:							
Exports	630	617	824	1,198	1,363	1,329	1,554

TABLE B.2.1.—TRADE OF EAST EUROPEAN COUNTRIES WITH INDUSTRIAL WEST—Continued

[In millions of U.S. dollars]

	1970	1971	1972	1973	1974	1975	1976
Imports	679	836	890	1,193	1,966	1,965	2,024
Balance	−49	−219	−66	5	−603	−636	−469
Poland:							
Exports	1,007	1,155	1,498	2,180	3,014	3,241	3,525
Imports	930	1,102	1,815	3,471	5,322	6,182	6,781
Balance	77	54	−316	−1,291	−2,308	−2,941	−3,256
Romania:							
Exports	590	716	889	1,435	2,052	1,854	2,130
Imports	774	833	1,070	1,554	2,500	2,318	2,207
Balance	−184	−116	−181	−119	−448	−465	−77
Eastern Europe:							
Exports	4,287	4,707	5,812	8,297	10,961	10,775	12,179
Imports	4,934	5,495	7,061	10,850	16,141	17,255	18,666
Balance	−647	−788	−1,249	−2,553	−5,180	−6,480	−6,487

TABLE B.2.2.—TRADE OF EAST EUROPEAN COUNTRIES WITH INDUSTRIAL WEST

[In millions of U.S. dollars]

	1977	1978	1979	1980	1981	1982
Bulgaria:						
Exports	608	732	1,278	1,639	1,446	1,259
Imports	996	1,150	1,321	1,662	2,168	1,913
Balance	−388	−419	−43	−22	−722	−653
C.S.S.R.:						
Exports	1,899	2,117	2,627	3,240	2,921	2,794
Imports	2,634	2,919	3,433	3,691	3,246	2,938
Balance	−735	−802	−806	−451	−326	−144
German Democratic Republic:						
Exports	2,477	2,616	3,135	4,173	5,445	6,687
Imports	3,784	3,707	4,991	5,815	5,952	5,602
Balance	−1,307	−1,091	−1,856	−1,642	−507	−1,084
Hungary:						
Exports	1,714	1,928	2,640	3,046	2,629	2,638
Imports	2,439	3,129	3,327	3,714	3,671	3,219
Balance	−725	−1,201	−687	−668	−1,042	−582
Poland:						
Exports	3,834	4,417	5,057	5,849	3,908	3,662
Imports	6,330	6,519	6,665	6,691	4,474	3,168
Balance	−2,496	−2,102	−1,608	−842	−566	495
Romania:						
Exports	2,120	2,649	3,510	4,036	3,989	3,410
Imports	2,576	3,502	3,897	4,092	3,535	1,934
Balance	−455	−852	−386	−56	454	1,476

TABLE B.2.2.—TRADE OF EAST EUROPEAN COUNTRIES WITH INDUSTRIAL WEST—Continued

[In millions of U.S. dollars]

	1977	1978	1979	1980	1981	1982
Eastern Europe:						
Exports	12,652	14,459	18,246	21,983	20,339	20,450
Imports	18,759	20,926	23,634	25,664	23,047	18,774
Balance	−6,107	−6,467	−5,387	−3,682	−2,708	1,676

TABLE B.3.1.—TRADE OF EAST EUROPEAN COUNTRIES WITH LDC

[In millions of U.S. dollars]

	1970	1971	1972	1973	1974	1975	1976
Bulgaria:							
Exports	130	147	166	238	473	504	496
Imports	86	120	135	164	318	222	250
Balance	44	27	31	74	154	282	246
C.S.S.R.:							
Exports	342	402	420	455	609	720	682
Imports	226	230	282	400	552	505	507
Balance	116	172	138	54	57	215	174
German Democratic Republic:							
Exports	192	223	224	288	368	444	500
Imports	189	186	162	234	542	497	620
Balance	3	37	62	53	−175	−53	−120
Hungary:							
Exports	137	139	170	211	325	363	392
Imports	177	159	188	255	425	498	523
Balance	−41	−20	−18	−44	−100	−135	−131
Poland:							
Exports	275	274	297	326	667	879	914
Imports	204	215	252	305	504	610	588
Balance	70	59	45	21	163	270	326
Romania:							
Exports	185	191	260	351	712	1,031	1,191
Imports	129	139	196	274	628	695	1,122
Balance	56	52	64	77	84	336	69
Eastern Europe:							
Exports	1,261	1,376	1,537	1,869	3,153	3,941	4,175
Imports	1,013	1,048	1,215	1,633	2,969	3,025	3,611
Balance	248	328	321	236	184	916	564

TABLE B.3.2.—TRADE OF EAST EUROPEAN COUNTRIES WITH LDC'S

[In millions of U.S. dollars]

	1977	1978	1979	1980	1981	1982
Bulgaria:						
Exports	662	835	999	1,388	1,879	[illegible]
Imports	289	268	297	378	502	[illegible]

TABLE B.3.2.—TRADE OF EAST EUROPEAN COUNTRIES WITH LDC'S—Continued

[In millions of U.S. dollars]

	1977	1978	1979	1980	1981	1982
Balance	373	567	701	1,010	1,377	1,277
C.S.S.R.:						
Exports	841	987	1,024	1,286	1,376	1,316
Imports	732	611	706	828	740	683
Balance	109	376	318	458	636	633
German Democratic Republic:						
Exports	565	767	853	1,105	1,268	1,506
Imports	717	678	776	1,117	702	1,024
Balance	−152	89	78	−12	566	482
Hungary:						
Exports	502	551	724	850	1,018	1,139
Imports	647	685	711	847	755	905
Balance	−145	−134	13	2	263	234
Poland:						
Exports	1,041	1,071	1,294	1,646	1,538	1,546
Imports	699	859	1,373	1,787	946	596
Balance	342	212	−79	−140	591	949
Romania:						
Exports	1,488	1,446	1,886	2,406	3,382	2,842
Imports	1,109	1,515	2,576	4,119	3,557	2,835
Balance	380	−69	−690	−1,713	−175	7
Eastern Europe:						
Exports	5,098	5,657	6,781	8,680	10,460	10,290
Imports	4,192	4,616	6,439	9,075	7,203	6,708
Balance	906	1,041	342	−395	3,257	3,582

C. Market Share Equations

The trend of East European export market shares in total OECD were estimated for 1970/82 by the following equation:

$$\ln(x) = a + b(t) \qquad x\text{: market share} \qquad t\text{: time}$$

RESULTS

Country	a	b	Standard error	R^2
Bulgaria	−2.309	−.037	.104	.679
C.S.S.R	−1.067	−.038	.043	.925
German Democratic Republic	−1.772	−.004	.083	.040
1970–79	−1.703	−.020	.045	.661
Hungary	−1.346	−.023	.068	.646
Poland	−1.516	−.041	.174	.474
Romania	−1.319	−.003	.084	.021

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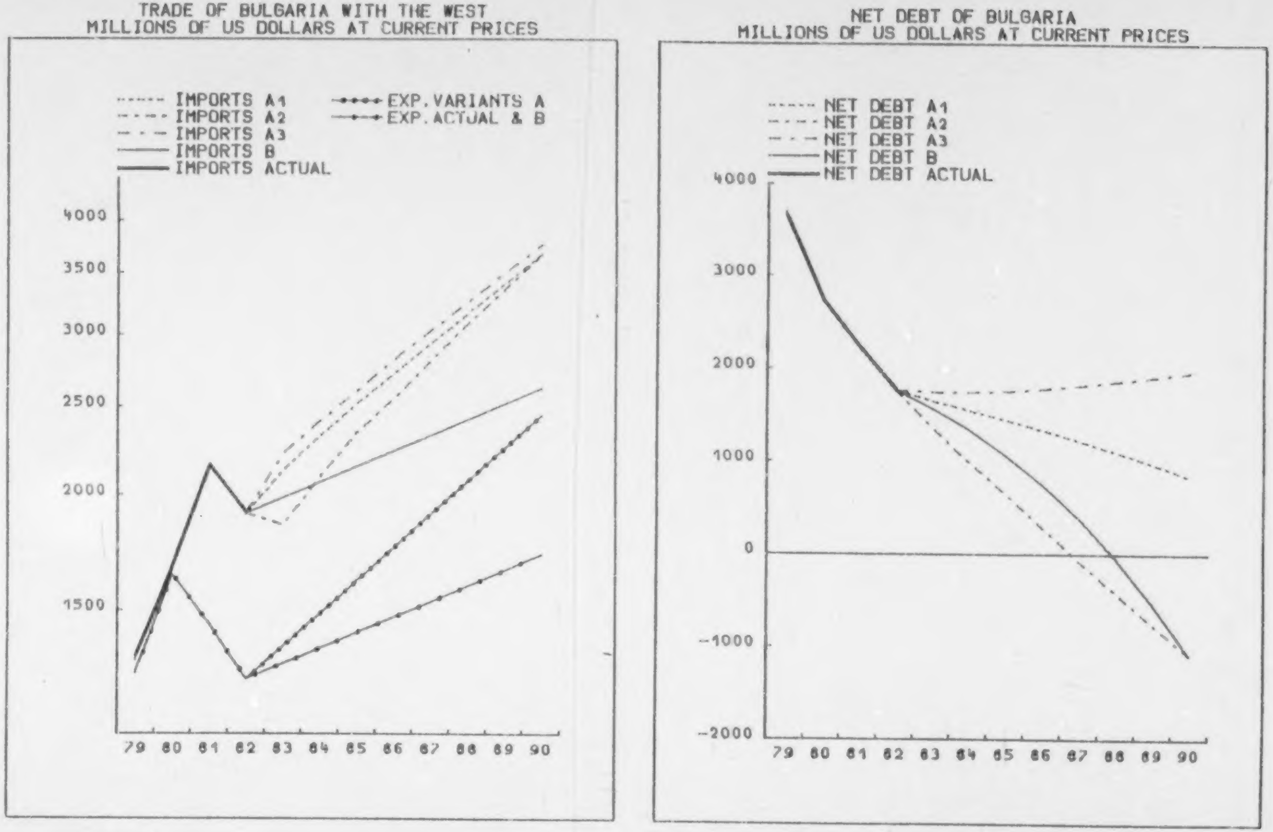
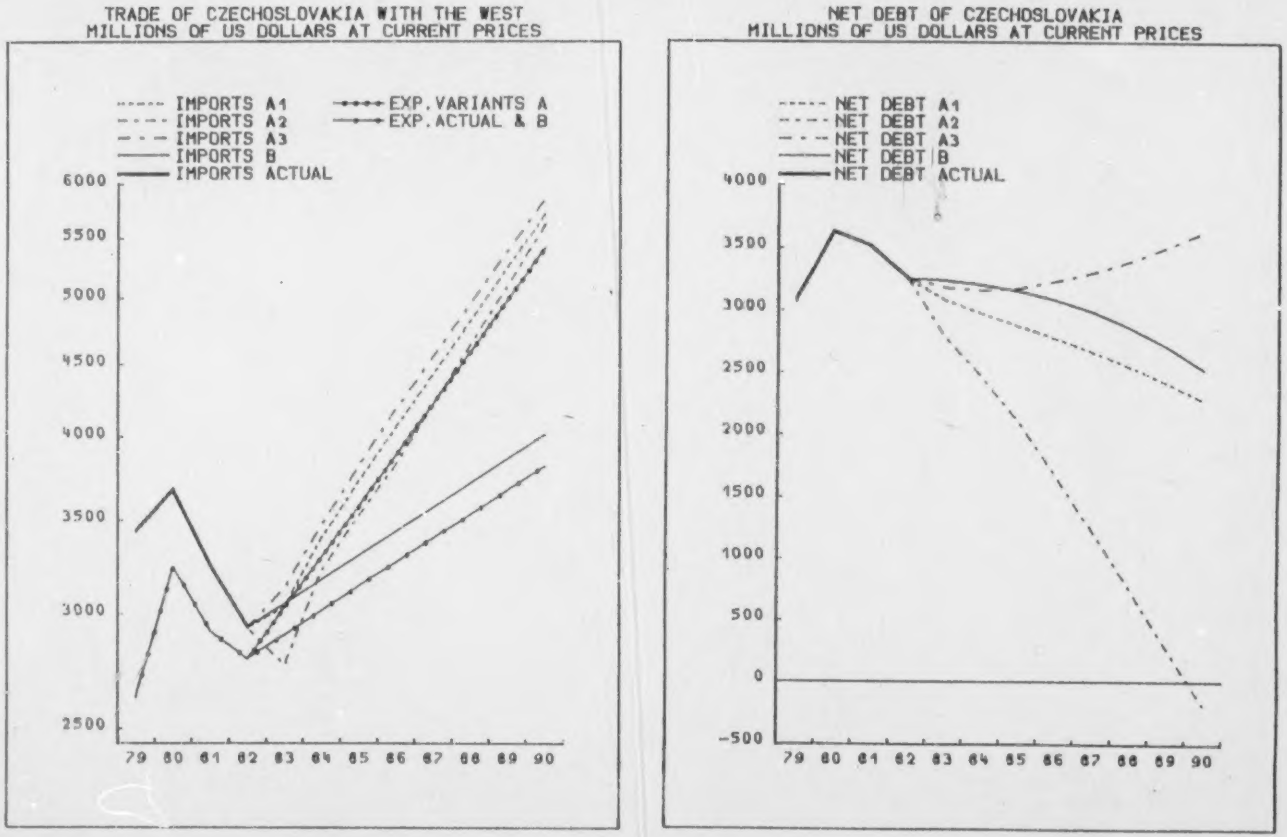
Graph 1



TRADE OF BULGARIA WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES

NET DEBT OF BULGARIA
MILLIONS OF US DOLLARS AT CURRENT PRICES

Graph 2

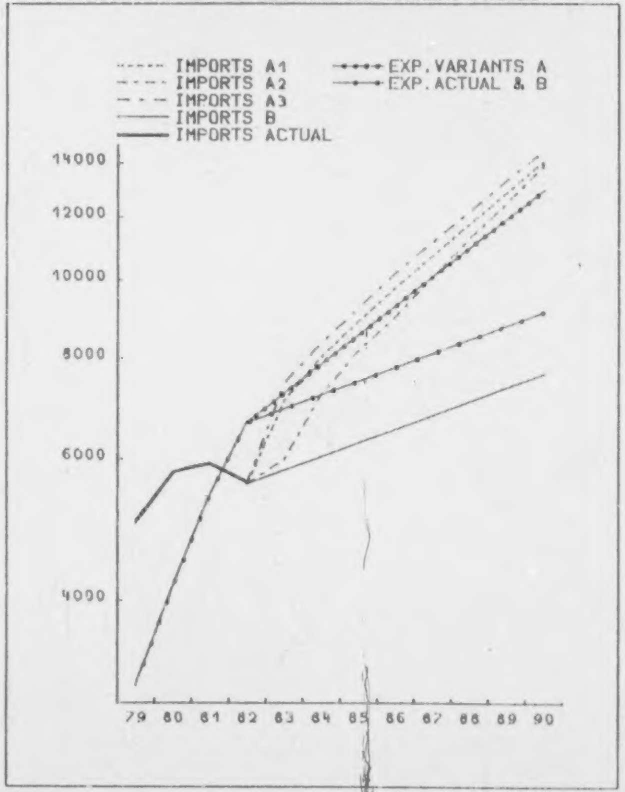


TRADE OF CZECHOSLOVAKIA WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES

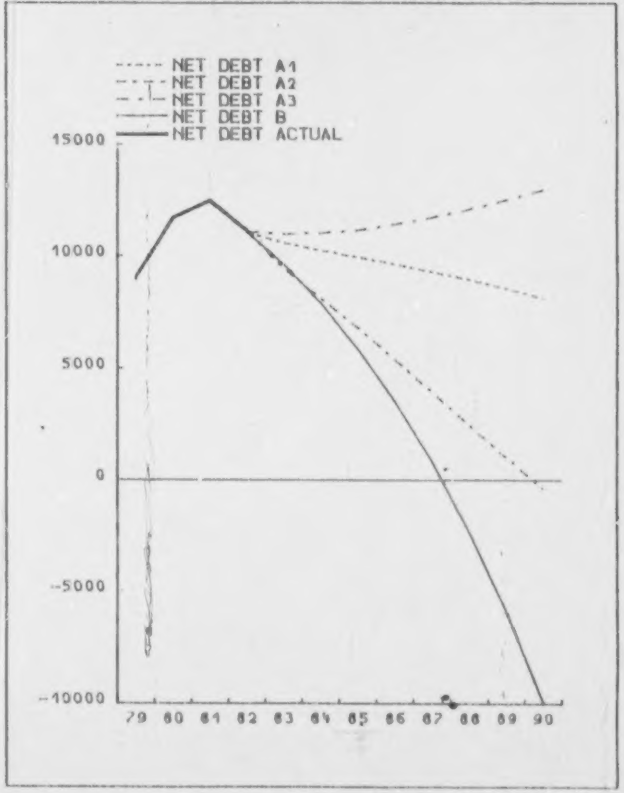
NET DEBT OF CZECHOSLOVAKIA
MILLIONS OF US DOLLARS AT CURRENT PRICES

Graph 3

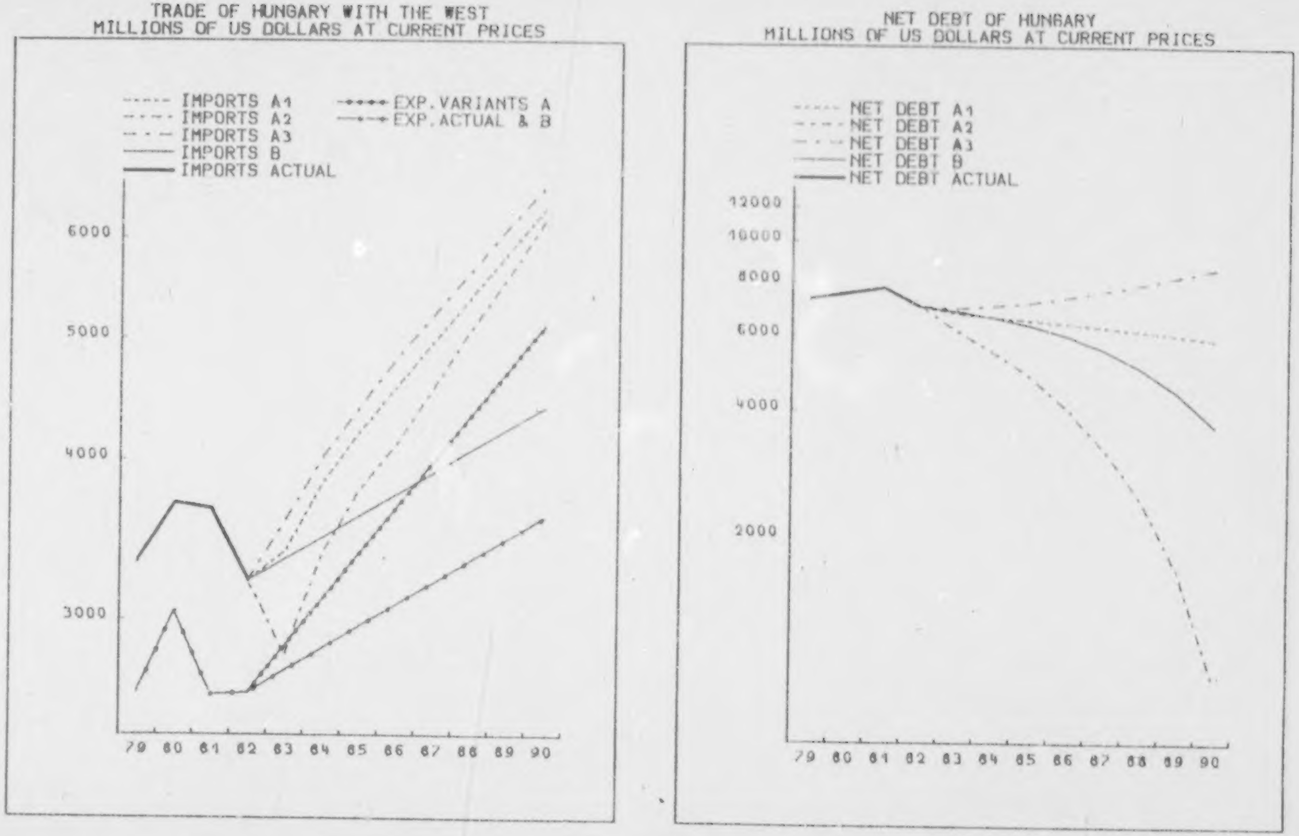
TRADE OF THE GERMAN DEM.REPUBLIC WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES



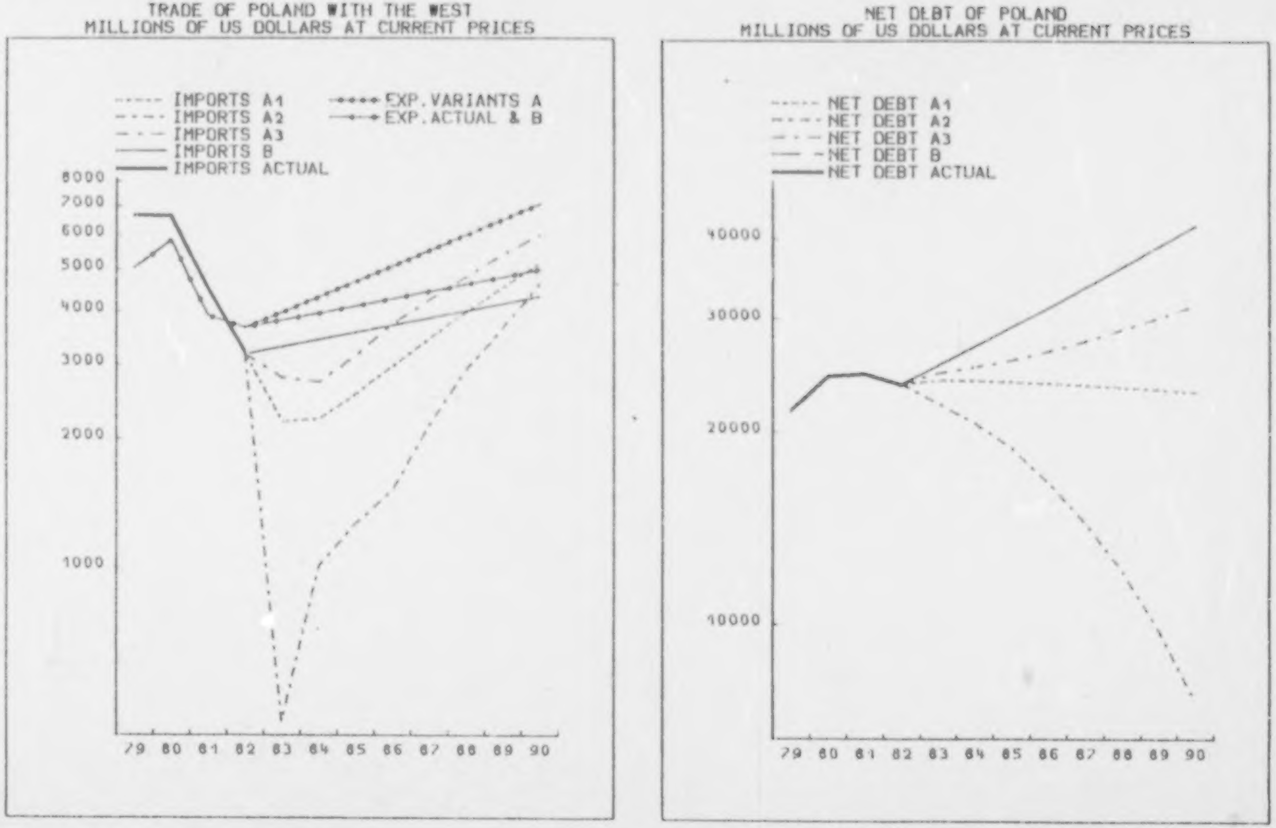
NET DEBT OF THE GERMAN DEM.REPUBLIC
MILLIONS OF US DOLLARS AT CURRENT PRICES



Graph 4


TRADE OF HUNGARY WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES
IMPORTS A1
IMPORTS A2
IMPORTS A3
IMPORTS B
IMPORTS ACTUAL
EXP.VARIANTS A
EXP.ACTUAL & B
6000
5000
4000
3000
79
80
81
82
83
84
85
86
87
88
89
90
NET DEBT OF HUNGARY
MILLIONS OF US DOLLARS AT CURRENT PRICES
NET DEBT A1
NET DEBT A2
NET DEBT A3
NET DEBT B
NET DEBT ACTUAL
12000
10000
8000
6000
4000
2000
79
80
81
82
83
84
85
86
87
88
89
90

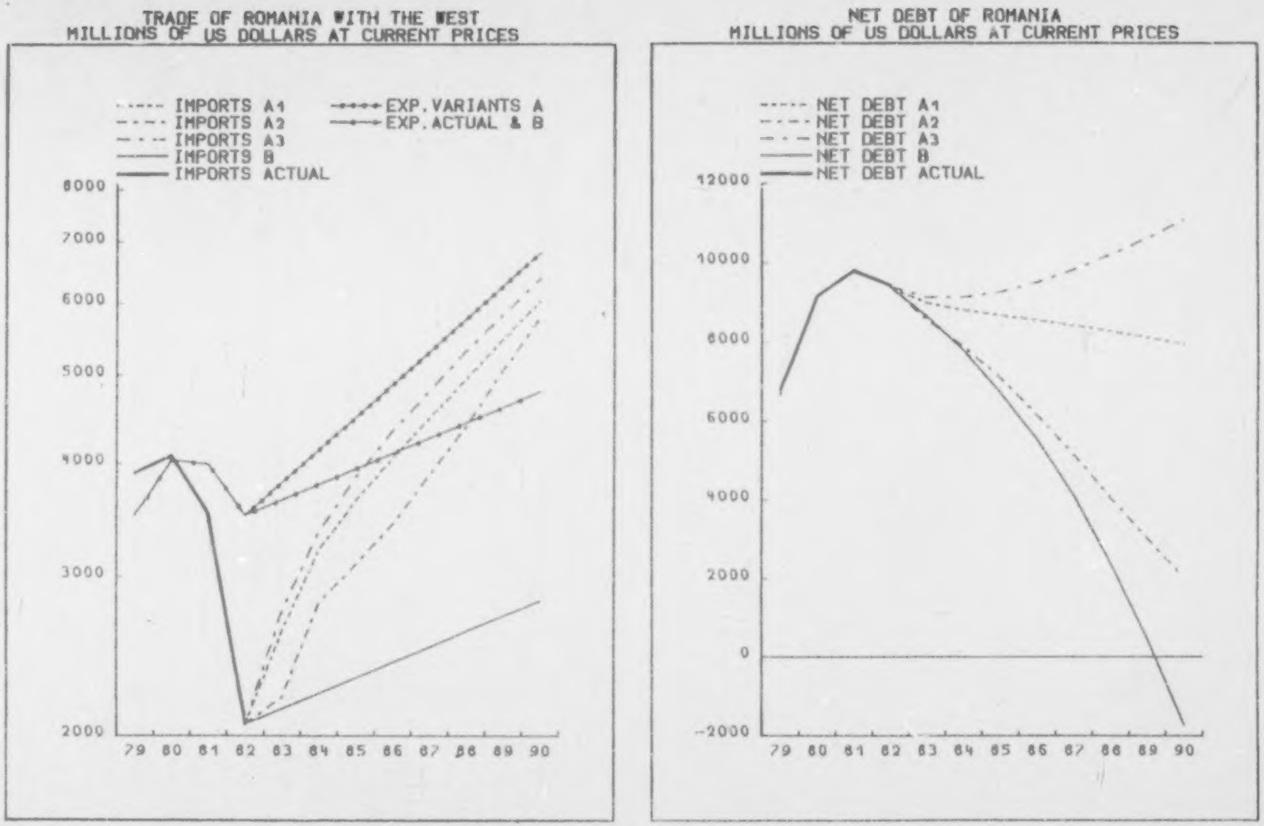
Graph 5



TRADE OF POLAND WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES

NET DEBT OF POLAND
MILLIONS OF US DOLLARS AT CURRENT PRICES

Graph 6



TRADE OF ROMANIA WITH THE WEST
MILLIONS OF US DOLLARS AT CURRENT PRICES

NET DEBT OF ROMANIA
MILLIONS OF US DOLLARS AT CURRENT PRICES

FINANCIAL CRISIS IN EASTERN EUROPE

By Allen E. Clapp and Harvey Shapiro [*]

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I. INTRODUCTION

During the 1970's, trade between the Eastern European countries[1] and the developed countries of the West grew more than fourfold—from $9 billion in 1970 to almost $50 billion by 1980. A fundamental factor behind this development was the desire of Western exporters, encouraged by the establishment of a more favorable political climate, to take advantage of what they saw as substantial potential sales opportunities in a new market. Their enthusiasm was matched on the Eastern side by a strong desire to import Western goods and technology. Imports were seen by several countries in the area as the key to the modernization, expansion, and development of their economies.

This trend was encouraged and facilitated by Western governments. They saw trade as a means of strengthening detente—on the assumption that the Eastern countries would develop an economic stake in maintaining friendly political relations and that economic exchanges would serve as conduits for the flow of Western culture, ideas, and values that would contribute to internal changes in these countries. Regarding Eastern Europe, an assumption that economic exchanges with the countries of the region would enable them to pursue greater economic and political independence from the Soviet Union, also influenced Western governments' approaches. Their direct involvement in the development of trade with the East, in the form of extension of official credits or guarantees of private loans to the Eastern European countries, was not a major factor, however. The major exception was Poland, where officially-backed loans constituted an increasing proportion of that country's rapidly mounting external debt.

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[*] Office of East-West Economic Policy, Department of the Treasury. The views expressed are solely those of the authors and do not necessarily represent the views of the Department of the Treasury. The authors wish to acknowledge with thanks the assistance of Margaret Sampson in the preparation of this article.

[1] Includes the six European members of the Council of Mutual Economic Assistance (CMEA)—Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania—plus Yugoslavia.

The Eastern European countries' increasing imports from the West were not matched by a comparable expansion of their exports. For the most part, these countries had been running trade and current account deficits with their hard currency trading partners in the West; as East-West trade expanded, so (with a few exceptions) did the Eastern European countries' trade deficits, as the rise in their imports outran that of their exports.

Their export promotion efforts were hampered in large part by an inability to produce goods of the types and quality that were marketable in the West; their imports did not significantly enhance their export capabilities as economic policy makers in the region had expected. The resulting deficits were financed by borrowing abroad, primarily from Western commercial banks. As a result, the gross debts of the countries of the region rose steadily (see table 1).

TABLE 1.—EASTERN EUROPE: GROSS AND NET HARD CURRENCY DEBT TO THE WEST

[In millions of U.S. dollars]

	1971	1975	1977	1978	1979	1980	1981	1982
Bulgaria:								
Gross	743	2,640	3,707	4,263	4,032	3,562	3,063	2,850
Net	723	2,257	3,169	3,710	3,292	2,783	2,234	1,850
Czechoslovakia:								
Gross	485	1,132	2,616	3,206	4,099	4,756	4,408	3,970
Net	160	827	2,121	2,513	3,050	3,500	3,534	3,200
East Germany:								
Gross	1,408	5,388	7,828	9,666	12,300	14,410	14,900	13,400
Net	1,205	3,748	6,842	8,320	10,340	12,260	12,715	11,435
Hungary:								
Gross	1,071	3,135	5,020	7,290	8,140	9,300	8,700	7,800
Net	848	2,195	3,856	6,349	6,910	8,000	7,800	7,050
Poland:								
Gross	1,138	8,014	13,967	17,844	22,669	25,120	25,500	24,800
Net	764	7,381	13,532	16,972	21,500	24,500	24,750	23,800
Romania:								
Gross	1,227	2,924	3,605	5,221	6,950	9,450	10,160	9,770
Net	1,227	2,449	3,388	4,992	6,650	9,130	9,810	9,460
Yugoslavia:								
Gross	NA	NA	8,413	10,741	13,462	16,853	18,337	18,280
Net	NA	NA	5,812	7,615	11,328	14,085	15,765	16,213

Sources: "Handbook of Economic Statistics, 1983," Directorate of Intelligence, Central Intelligence Agency, CPAS 83-10006, September 1983, p. 46; (for Yugoslavia) "Statistical Abstract of East-West Trade Finance," Office of Trade and Investment Analysis, International Trade Administration, U.S. Department of Commerce, December 1983, p. 3.

II. THE POLISH EXPERIENCE

The case of Poland is worth examining as a more concrete illustration of these generalities. It is an extreme case, insofar as the aspects of the Eastern European countries' experiences during the late 1970's and into this decade being treated here went much farther than in other countries of the region. Nevertheless, by virtue of the fact that several of these other countries did follow the same path as Poland to some extent and all were eventually, albeit to varying degrees, hit by the fallout from the economic and financial misfortunes that befell the Poles, the Polish case is worth exploring in some detail.

In the early 1970s, Poland embarked on an ambitious economic development strategy to modernize its economy and to increase substantially the living standards of its people. The strategy envisaged a simultaneous expansion in investment and consumption. This could be undertaken only with foreign borrowing, primarily from the West.

Massive increases in investment were needed to reorient the economy away from inefficient import substitution and toward development of a competitive export sector. Priority emphasis was given to investment in heavy industry, which required imports of capital equipment from the West. Restructuring the economy also necessitated the introduction of substantial inputs of Western technology to increase overall productive efficiency.

In order to achieve these goals, the Polish authorities gave Polish workers added incentives. Substantial increases were planned in both the quality and quantity of goods available to the Polish consumer. A sharp increase in production of food supplies, especially meat, by use of appropriate pricing incentives for the large private farm sector, was planned.

The Polish planners believed that access to Western credits and technology would permit a rapid expansion of modern, competitive, efficient production of goods that could be sold in Western markets. They also expected that the trade deficit which would be incurred to obtain the productive inputs from the West would soon shift to a trade surplus, enabling the Poles to repay their hard currency debts.

A. Early Results

The Polish economy registered some impressive gains in the early 1970s, with real economic growth averaging 6 percent per annum. However, it became apparent by the middle part of the decade that the strategy was encountering major difficulties.

The main problems stemmed from the fact that the Polish authorities made a number of policy errors. For example, when the Western recession began in 1974, they continued to increase imports at a rapid rate to build their new industrial capacity. As a result, Poland's trade deficit with the West widened, exceeding $2 billion by 1976. Between 1975 and 1980, Poland's cumulative current account deficit with the West amounted to a massive $18 billion.

The Poles also tried to insulate their economy from the inflationary pressures of the mid-1970s by utilizing subsidies, price controls and taxes. These measures increased the distortions which already existed and ultimately reduced the ability of productive sectors of the Polish economy to compete in world markets.

The recession in the industrialized Western countries impacted severely on Poland's economy, as with other economies which had geared their growth in large part to exports to the West. Contributing to these problems were Poland's export constraints arising out of inadequate marketing, servicing, and advertising expertise. Also, the Poles did not develop incentives to induce managers to produce for export. The existing system favored domestic production because managers found it easier to meet planners' goals and obtain bonuses by producing for domestic consumption rather than for export, which required greater effort.

Poor harvests, brought on by six consecutive years of bad weather and inappropriate agricultural policies, compounded Poland's economic malaise. The emphasis on expansion of heavy industry had resulted in a neglect of agriculture. Moreover, Poland's agricultural sector was highly vulnerable to poor weather.

The combined effect of these factors was that Poland suffered an average annual rate of decline in real national income between 1979 and 1981 of 5 percent, after 8 years of rapid growth. During this period Poland, and other Eastern European members of the Soviet bloc, ran larger trade deficits with the U.S.S.R. The Soviets also provided subsidies to Poland and those other countries (with the exception of Romania) through sales of oil and raw materials to them at prices below world market levels.

B. Polish Debt Accumulation and the 1981 Rescheduling

Beginning in the early 1970s, the Poles took advantage of their relatively easy access to Western capital markets by borrowing to finance a large portion of their economic growth. As their development plans began to falter, they became less able to service their debt.

In 1972, Poland's gross hard currency debt totaled $1.6 billion. Its debt service, consisting of $200 million of principal and $74 million of interest, amounted to only 15% of its foreign exchange earnings from exports of goods and services to non-Communist countries. Poland's imports from non-Communist countries exceeded its exports to these countries by $1.3–3.3 billion annually between 1973 and 1979, as the authorities continued to pursue their development program. By 1979, Poland's external hard currency debt service ($3.6 billion in principal and $2.2 billion in interest payments) equalled 92% of its hard currency export earnings. At mid-year 1981, Poland's hard currency debt stood at approximately $26 billion. It owed roughly $20 billion of this to 16 Western countries: $11 billion to official creditors for loans extended or guaranteed by them, including $1.9 billion to the U.S. Government, and $9 billion of unguaranteed debt to private banks, including $1.3 billion to U.S. banks.

At the beginning of 1981, it was estimated that Poland would require some $11 billion in hard currency financing to cover its projected trade deficit for 1981 and to service its debt. Poland was clearly not in a position to raise such sums. On March 26, 1981, the

Polish Government notified its creditors that it would no longer be able to guarantee payment of its external debts.

The governments and private banks responded by agreeing to enter into debt rescheduling negotiations. Separate debt rescheduling exercises were organized by the official and private creditors. Fifteen creditor governments (later increased to 16 with the addition of Spain) signed a multilateral debt rescheduling agreement with the Government of Poland on April 27, 1981. This agreement served as an umbrella agreement for subsequent government-to-government agreements to reschedule 90% of Poland's debt service obligations to these creditors, involving both the principal and interest falling due during the last three quarters of 1981. These obligations, totaling $2.4 billion, were to be repaid during a 4-year period beginning in 1985. Interest on the rescheduled interest was to be charged during the grace period, 1981–1985.

Western banks, moving on a parallel track, established a consortium which negotiated a debt rescheduling agreement with the Polish Government by September. Their ad referendum agreement with the Poles provided for rescheduling 95% of the principal ($2.3 billion) of their debt falling due during April–December 1981, over 8 years, including a 4-year grace period.

The consortium of Western banks set a precondition for signing the document, namely that Poland pay all of the 1981 interest—an estimated $700 million—which was to fall due in the last nine months of 1981. The Government of Poland could not completely fulfill this condition at year end, and, as a result, the Western banks did not sign the rescheduling agreement.

In an effort to meet the condition, Poland made some payments to reduce its arrearages. In December, the Poles requested that the banks provide a short-term loan to pay off their country's remaining interest arrearages. The banks refused and continued to insist on repayment in full of all 1981 interest.

In April 1982, the Polish government paid its 1981 interest arrearages to Western banks and the interest due during January–April 1982 on the consolidated 1981 debt. The banks then signed the 1981 rescheduling agreement.

C. Subsequent Bank Reschedulings

In 1982 and 1983 Western banks rescheduled Polish debt service due them—despite the continued suspension by their governments of negotiations on the Poles' official debts. On November 3, 1982, the banks agreed to reschedule 95 percent of the principal due in 1982 until 1986, with repayment over four years. The remaining 5 percent of principal was to be paid in two installments, on August 20, and November 20, 1983. Interest payments of $1.1 billion were to be paid in three installments, on November 20 and December 20, 1982 and on March 20, 1983. The banks also agreed to relend to Poland an amount equal to 50 percent of the original contact interest ($550 million) to finance imports of goods and services essential for domestic production of goods that would be exported to earn hard currency.

An agreement covering debt obligations due in 1983 was concluded in November of that year along similar lines. The banks rescheduled 95 percent of principal ($1.5 billion) until 1988–1992. The remaining 5 percent was due in January 1984. The interest on the original loan contracts ($270 million) was paid in November and December 1983. The banks also agreed to relend to Poland 65 percent of the original contact interest to finance imports.

The banks and the Government of Poland began negotiations in February 1984 on a rescheduling covering all remaining unrestructured debt due in 1984–88. No agreement had been reached by the end of March of that year.

D. Governmental Sanctions

Poland's official creditors agreed in November 1981 not to begin negotiations on rescheduling Poland's 1982 debt service until it had signed its 1981 rescheduling agreement with the commercial banks. After the Polish Government's imposition of martial law in the following month, the NATO member countries, at a ministerial meeting of January 11, 1982, called for a suspension of consideration of debt rescheduling negotiations for the time being. The official creditors, including the United States, met a few days later and concluded that rescheduling negotiations should be held in abeyance.

In addition, the allies stopped new commercial credits and restricted food exports, except humanitarian assistance, to Poland. These actions resulted in a sharp drop in Western government-backed financing of exports to Poland as existing credit lines were drawn down and not replaced. The United States also took unilateral measures to put pressure on Poland by suspending Polish airline landing and fishing rights.

In the wake of the Pope's July 1983 visit to Poland, the formal ending of martial law, and the release of the vast majority of political prisoners by the Polish Government, the U.S. and other official creditors agreed to reopen rescheduling discussions. They sent a multinational task force of experts to Warsaw in October 1983 on a fact-finding mission. Meetings to reschedule Poland's debt were subsequently held with Polish officials in Paris in November 1983 and March 1984. No agreement had been reached as of the end of March.

E. The Default Issue

In the spring and summer of 1982, three separate Senate subcommittees held hearings on the question of whether the U.S. Government should declare Poland in default. The hearings were in reaction to the Polish Government's declaration of martial law in December 1981.

The issues addressed in the hearings included what a formal declaration of default would accomplish and whether the U.S. Government could force U.S. banks and other governments also to declare Poland in default. U.S. Government officials testified that a formal declaration of default could provide an excuse for Poland to cease making payments and illegally repudiate its debt to the West. This would be counterproductive in that it would ease existing financial pressures arising out of the net payments the Poles were making to the West. Moreover, a unilateral declaration of default by the U.S.

Government would not necessarily result in other governments or banks following suit. The governments were not obliged to follow our lead. Private banks would be under no compulsion to declare default and would only have a clear incentive to do so if they expected that the United States or other governments would obtain a preferred position in any subsequent legal steps against Polish assets. Finally, a declaration of default would not enable the U.S. Government to collect the money it was owed by seizing Polish assets because, apart from diplomatic property (which cannot be attached), there were few such assets.

The Congress, nevertheless, enacted legislation prohibiting the Commodity Credit Corporation (CCC) or other U.S. Government agencies from paying funds to U.S. banks on loan guarantees to Poland unless it is declared in default or the President reports monthly to the Congress that such payments are in the interest of the United States. The authority for the monthly report was delegated to the Secretary of State, who has submitted such a report each month since October 1982. The basic rationale for the default waiver is that not declaring a default and continuing to insist on timely payments is the best way to keep pressure on the Polish Government to repay its debts. Furthermore, this approach was consistent with the multilateral approach toward Poland and the Soviet Union adopted by the United States and its NATO allies. There was a consensus among our NATO allies that our mutual interests were best served by not declaring Poland in default.

F. Future Prospects

Polish debt service obligations in 1984 amount to nearly $18 billion, including about $11 billion in arrears. Interest payments are estimated at $2.4 billion. The Poles' hard currency trade and services earnings are expected to total $1.5 billion. The Poles also expect to receive $200 million in new credits. Thus, the results of the Polish rescheduling negotiations with all of their creditors will determine the extent to which Poland is able to meet its obligations. Since Poland is currently unable to cover even its interest obligations, its debt will therefore continue to grow in 1984 and afterwards, until its trade and services income increases sufficiently to cover this obligation. This will require a revival in economic growth and a decision by the Polish Government to divert more resources to increasing production and repaying foreign credits than to maintaining or even increasing consumption. Systemic changes are necessary to obtain sustainable rapid increases in production. At present however, the government appears to be concentrating on maintaining consumption. Thus, Poland's economic prospects at present appear quite bleak.

III. FINANCIAL DIFFICULTIES DEVELOP IN THE REST OF EASTERN EUROPE

The events in Poland, as they unfolded, cast a shadow over the rest of Eastern Europe. As indicated below, the Poles' financial dilemma, and the lack of an adequate (from the creditors' standpoint) response by the Soviets, disillusioned those who still had any faith in the "umbrella theory". Many in the West also began to take a closer look at the economic and financial conditions in other countries in the region more closely in light of their recent experience with Poland. What they perceived in several were conditions that were to them distressingly similar to those that had brought the Poles to grief—a substantial accumulation of debts, chronic current account deficits, and mounting debt service obligations. Moreover, the governments of these countries did not seem to be able to take effective action to improve their situations.

Concerned about the Eastern European countries' ability to handle their debt obligations, Western bankers began to curtail their lending in the region and refuse to renew short-term lines of credit. This exacerbated the serious economic and financial problems Romania was already encountering. Hungary, with the most open, Western-oriented economy in the region, was also adversely affected, as was the more Soviet-style, centrally-planned economy of the GDR. Bulgaria and Czechoslovakia, which had chosen not to get as heavily involved in economic exchanges with the West and had small trade deficits and hard currency debts, were not as seriously affected. Yugoslavia, a neutral but nevertheless Eastern European country, encountered problems that were similar to those of its neighbors.

Since the initial impact of the Polish crisis, all of the Eastern European countries have coped with its effects. The degree of adjustment required and the approaches they have taken have varied with their economic circumstances and the nature and degree of their involvement in the international financial system. However, there is some commonality in the measures they have used. These include squeezing their domestic economies (primarily investment); suppressing imports; direct limitations on imports through government controls; rescheduling; borrowing from Western banks, governments, and other sources; and tapping the International Monetary Fund and other multilateral institutions.

The following is a survey of the experiences and approaches of the other countries of Eastern Europe in dealing with the 1980–82 financial crisis. The survey focuses on the most severely affected countries—Romania, Yugoslavia, Hungary, and the GDR—and treats in more summary form those—Bulgaria and Czechoslovakia—which were relatively immune to the effects of the crisis by virtue of their more solid economic financial positions, but which still had to make some adjustments.

As is indicated by the brief recounting above of the types of adjustment measures utilized by the Eastern European countries, the approaches that they used consisted of a mixture of direct and indirect (through control of domestic economic activity) controls on trade to suppress imports on the one hand and financial tools on the other. The emphasis in this section will be on the financial aspects of the respective countries' efforts, with some attention to the macroeconomic adjustment measures that they took to improve their financial situations.

A. Romania

In late 1981, Romania fell into arrears in repayment of its commercial debt. As a result, foreign lenders reduced the availability of credit to it, and the IMF suspended its access to the standby arrangement the Government of Romania had obtained earlier in the year.

The immediate cause of Romania's financial difficulty was the fallout from the Polish situation, but this was just the culmination of problems that had been mounting for some time. Over the past two decades, Romania has developed rapidly—changing from an agrarian to an industrially based economy. This was the result of a very high investment rate and emphasis on heavy industry, including petroleum refining.

In the late 1970's, however, Romania's external position had been deteriorating. To finance its deficits, Romania increased its borrowing abroad, relying to a large degree on short-term credit. In the process, it increased its gross hard currency debt to over $9 billion by 1980. In that same year its current account deficit jumped further in the wake of the second "oil shock". Beset by its increasing balance of payments difficulties, the Government of Romania applied for IMF assistance. A three-year, SDR 1.1 billion arrangement was approved by the IMF Board in June 1981.

In early 1982 the Government of Romania embarked on a program to restore its economic and financial viability. In June the IMF Board approved a resumption of Romania's standby program. In July, its Western government creditors agreed to reschedule $400 million in debts due in 1982 and in arrears from 1981. The terms were that 80 percent of payments of principal and interest on medium- and long-term debts covered would be repaid over 6.5 years, including 3-years' grace, and the remaining 20 percent and all short-term debts would be repaid during 1982. In December, Romania's bank creditors rescheduled $1.7 billion on similar terms—the principal difference being that they covered short-term debts but required that Romania continue to make its interest payments when due. Romania also arranged a $100 million bridging loan with the Bank for International Settlements (BIS).

With this external assistance and a successful effort to suppress domestic economic growth and hence imports, Romania managed to produce a substantial improvement in its external payments situation. Nevertheless, it did require a rescheduling of its 1983 debt payments, albeit for smaller amounts and on stiffer terms. Both its government and bank creditors rescheduled its principal repayments on terms of 60 percent repayment over 6.5 years, including 3 years grace; 30 percent repayment in 1983; and 10 percent in 1984. The official rescheduling covered about $200 million in debts and that from the banks a bit less than $900 million. Romania is not expected to require another rescheduling in 1984, in part because of the success of its balance of payments adjustments and in part due to a decline in its debt payment obligations during that year.

B. Yugoslavia

Although it is not a member of the CMEA and has a distinct economic and political system, Yugoslavia shared some of the same economic and financial problems as its Eastern European neighbors; like them it was adversely affected by the fallout from the Polish debt crisis.

Yugoslavia's financial situation deteriorated in 1982. Its current account deficit was larger than anticipated, its foreign exchange reserves fell to less than one month's import coverage, and strong inflationary pressures continued unabated. The capital account balance deteriorated substantially and Yugoslavia was able to complete a $200 million bank syndication only with great difficulty. The net inflow of long-term capital was negligible (scarcely $100 million compared to more than $1 billion in the years 1978 through 1980 and $800 million in 1981). In addition, there was an outflow of short-term capital of about $500 million.

By late 1982, it was apparent that Yugoslavia faced a liquidity squeeze that would probably render it unable to meet its debt obligations during the following year. An effort was begun to assemble a package of financial assistance from Western governments, banks, and international financial institutions to assist Yugoslavia through its economic and financial difficulties. The major elements of this package were as follows:

$1.3 billion in pledges by Western governments;

$600 million in new loans from commercial banks plus rollovers of short-, medium-, and long-term debts totalling about $2 billion;

$620 million from the IMF under an already existing standby;

$400 million from the World Bank; and

$500 million in bridge financing from the BIS.

The major objectives of the 1983 IMF standby program were to bring about a substantial improvement in Yugoslavia's convertible currency current account balance and to increase foreign exchange reserves. Domestically, the objectives of the program were to (1) restrain the growth of personal income, (2) reduce price distortions, (3) increase interest rates, and (4) limit the growth of both money and credit.

The current account objective was more than achieved as Yugoslavia's convertible currency balance swung from a $1.6 billion deficit in 1982 to a $300 million surplus in 1983. A large part of this improvement was attributable to a 25 percent real devaluation of the dinar and to tight restriction of demand. Its GSP declined by 2½ percent and final domestic demand by more than 5 percent, primarily because of a more than 12 percent drop in gross fixed investment. Despite this progress on the external account, a number of problems remained—the rate of inflation increased, real interest rates remained negative, investment declined for the fourth consecutive year, and the savings ratio fell.

C. Hungary

Like most other countries in the Eastern European region, Hungary experienced balance of payments difficulties in 1981 and 1982 largely because it had accumulated a substantial external debt in the 1970's which left its economy vulnerable to the effects of the financial shock caused by the Polish debt situation. Following the 1973 petroleum price increase, the Hungarian Government tried to cushion the economy against its inflationary effects by reverting to greater central control of prices. This produced, however, a deterioration in the country's balance-of-payments position in the mid- and late 1970's.

After experiencing a $1.2 billion hard currency current account deficit in 1978, the Hungarian Government implemented a major reform program aimed essentially at bringing market mechanisms into play and having domestic prices reflect world realities. Industrial investment was restricted to profitable Western-oriented export industries; domestic prices were brought closer to world prices and producer subsidies were cut; unprofitable firms were merged with profitable enterprises or liquidated; monopolies were broken up to increase competition and allow greater flexibility; and more small privately owned businesses were permitted. The Hungarians also worked towards, and finally succeeded in, unifying their multiple exchange rate system (on October 1, 1981), when the commercial and tourist exchange rates were unified at 35 forints to the dollar.

The stabilization program cut GNP growth from an average annual rate of 2.7 percent in 1976–78 to less than 1 percent since 1978. Investment, which had increased as a share of GNP between 1968–78, has fallen more than 20 percent over the past three years. Real private consumption, however, increased by an average of 1.6 percent, faster than in any other East European country except East Germany.

The decline in economic growth helped Hungary with its hard currency balance-of-payments problem. Its hard currency deficit dropped from $1.2 billion in 1978 to $365 million in 1980 largely because of a $700 million decrease in its trade deficit with the West and a $400 million increase in Hungary's hard currency trade surplus with the socialist countries. The cutbacks in investment and the slowdown in industrial production reduced imports of capital goods and industrial materials and spurred sales of semi-manufactured goods to the West. Imports of consumer goods continued to rise because of the high priority given to maintaining living standards.

The 1981 current account deficit rose to almost $700 million or nearly double that of 1980, largely because of increased interest payments. Hungary's hard currency exports declined because of a poor harvest and the Western recession. The decline in exports to the West was partially offset by increased hard currency exports to the U.S.S.R. and some Arab countries.

Hungary began 1982 with reserves of $1.8 billion, or about five months import cover (at 1981 levels). During the first quarter of 1982 deposit withdrawals by Western, CMEA, and OPEC banks reduced Hungary's reserves to less than $400 million.

In an effort to head off a possible financial crisis, the Hungarian Government implemented a number of internal measures to further reduce domestic investment, including an additional 25 percent tax on investments other than those related to convertible currency exports and energy saving, restrictions on the use of retained profits to finance investment and inventories, credit restraint, etc. It also took some modest steps to restrain consumption—mainly increasing energy prices and some tightening of wage policy. The government also adopted new restrictive import measures (import quotas) for certain primary products and import surcharges on certain components.

In May 1982 Hungary joined the IMF and received a $600 million standby and commodity compensation credit in December 1982. Earlier it also sought external financial assistance to carry it over until the end of 1982 when it expected to obtain the IMF financing. Hungary obtained (1) $210 million from European central banks via the BIS in the spring, (2) a $260 million club loan from western banks in August, and (3) another $300 million from the BIS in September.

During 1983, Hungary secured additional external financing, including a $200 million, 3-year commercial loan from a group of banks in April. It also benefitted from trade credits and two World Bank loans totalling $240 million.

D. East Germany

East Germany was heavily indebted but did not require debt relief or emergency loans during the financial constraints of the early 1980s. This was accomplished by tough adjustment measures and skillful cash management. The special relationship that East Germany enjoys with West Germany was also an important factor in the improvement of the East German external trade and financial positions. As a result, the probability of rescheduling GDR debt has diminished significantly in the last two years.

East German debt grew from about $1.5 billion in the early 1970s to peak at about $14.9 billion in 1981. In 1983, the country's debt was approximately $12.3 billion. With the onset of the credit squeeze, East Germany suffered the sharpest cutback in credits in the region. The majority of the credit shortfall was offset by promoting exports, constraining imports, and limiting investment to reduce overall debt. These measures took their toll on the economy in 1982, when GNP growth fell markedly from the previous year.

Economic performance in 1983 was more promising, due in part to energy conservation measures. With the improvement of inner-German relations after the rift due to INF deployment, inner-German trade finance flows have helped to improve the GDR's financial position. Recent trade surpluses have led to the accumulation of a comfortable level of reserves.

With the worst of its financing problem past, East Germany looks forward to reduced repayments on its medium- and long-term debt in 1984–85, mainly because a major portion of its debt obligations should be paid. Nevertheless, because lenders will very likely remain cautious about extending new medium-term credits, East Germany will still have the problem of rolling over a large short-term debt. Continuation of the recent balance of payments performance will improve lender confidence, but trade and conservation adjustment measures will soon reap diminishing results.

East German planners have not taken measures that will promote the role of market-related forces in the long-run development of the economy. The economy faces several chronic impediments to growth. Its processing economy is highly vulnerable to external factors, such as changes in CMEA prices for raw materials. The economy also depends on imports of technology from the West. Labor is in short supply, and the industrial plant is aging. Hence the possibility that the East Germans' payment problems and the possibility of their having to seek a debt rescheduling will not disappear entirely during the next several years.

E. Bulgaria

Although its debt service ratio grew to be the heaviest in Eastern Europe in 1975, subsequent policy changes gained for Bulgaria the best financial position in the region. Sofia began a conservative trade policy in 1977, which resulted in several years of consecutive current account surpluses. A parallel policy of financial independence from the West brought Sofia its current low debt. Moreover, the maturity structure of its debt is now easily manageable. Due to these measures, Bulgaria has steadily reduced its debt and accumulated reserves.

This strong financial position gives Bulgaria some leeway in its external accounts. There is room to reduce debt further or to expand hard-currency imports significantly without increasing total debt.

F. Czechoslovakia

Because of Czechoslovakia's past CMEA-oriented trade and debt policies, it had low hard currency financing requirements during the credit crunch. Western lending constraints had little more effect than to accelerate Czechoslovakia's plans to curb Western imports and to pay off its hard-currency debt.

In 1981, President Husak announced that Czechoslovakia would not "live on credit." Because the Western economic recession hurt Czechoslovak export earnings, sharp cuts in imports were needed in order to reduce its external debt. By the end of 1982, these efforts had had moderate success in reducing Czechoslovakia's already low hard currency debt.

As for the future, thanks to Prague's relatively good standing with Western banks, Czechoslovak planners will likely have the ability to choose between continuing to reduce their country's debt or loosening their reins on imports.

IV. Conclusion

The 1980–82 financial crisis in Eastern Europe may be seen to represent a watershed in East-West economic relations. As outlined briefly at the outset of this article, the Eastern European countries only began to get seriously involved in international trade and finance in the 1970's. As the flows of goods and capital increased in the latter part of the decade, there emerged a pattern which, not only when viewed in hindsight, was unsustainable. Several increased their imports of inputs and capital equipment for projects intended to increase exports. They met with some success, but for the most part failed to produce a rise in exports that would keep pace with the increase in their imports. As a consequence, all but Bulgaria and Czechoslovakia developed and continued to run substantial hard currency current account deficits.

Even in the face of these mounting deficits, Western bankers, for a variety of reasons, were insufficiently cautious in their lending to the region and made funds available to the Eastern European countries to allow them to continue to finance their deficits. (One reason was that the Eastern European countries had very low hard currency debts to the West in the early 1970's; among the CMEA countries, East Germany, for example, had the highest gross debt of all in 1971—$1.4 billion.) As a result, all but Bulgaria and Czechoslovakia accumulated substantial external debts; it became increasingly difficult for them to meet their debt obligations.

About two years after the Polish crisis developed with full force, the countries of the region that were adversely affected by it have stabilized their external economic and financial situations. All but Poland have reached the point where they can meet their debt obligations and there is no longer any imminent danger of default or other financial calamity.

Those that needed outside assistance turned to a variety of sources. As is evident from the brief summaries of their efforts to deal with the dilemmas they encountered, the respective countries adopted a variety of approaches—in accordance with differences in their circumstances and their governments' attitudes. Measures that one or more countries utilized include the following: reschedulings or refinancings (Romania, Poland, and Yugoslavia); IMF standby programs (Hungary, Romania, and Yugoslavia); World Bank loans (Hungary and Yugoslavia); new commercial bank financing (Hungary, Poland, and Yugoslavia); and BIS bridge financing (Hungary, Romania, and Yugoslavia). In the process both sides—the Eastern European governments and the foreign lenders—undoubtedly gained valuable experience in dealing with each other.

External financing was supplemented by efforts by the Eastern European countries, which varied with the seriousness of their respective financial problems, to reduce their balance-of-payments deficits. Several had tried to do this in the 1970's, by decreasing imports and promoting exports, but had largely failed while continuing to borrow. When external lending virtually ceased and they had problems in meeting their obligations in 1981-82, most responded effectively by using their centralized control over their economies to suppress domestic economic activity, and hence demand for imports. Investment and overall economic growth dropped as did, accordingly, imports.

To a great extent, these countries recognized and willingly imposed such restraints as necessary to restore the financial viability of their economies. In several cases their efforts also received some impetus from the outside as well. In the cases of Hungary, Romania, and Yugoslavia reduction of imports was required as part of the adjustment measures they agreed to with the IMF as part of their standby programs. Other lenders also made it clear that their financing was conditioned on reduction of the borrowers' current account deficits. To some degree, the Eastern European governments had no choice: with the curtailment of external financial flows, they simply did not have the means to pay for imports.

Another noteworthy point is that the burden of adjustment fell on the import side via suppression of domestic economic activity in the Eastern European countries. None has been very successful in developing and promoting new exports. Most recently, they have been inhibited by the continuing recession in their Western markets. The continuing reduction in their imports, insofar as it limits the availability of capital goods and imports for the development and maintenance of export industries, will undoubtedly depress their future export capacities.

A. Lessons For the West

~~Their~~ experience in Eastern Europe has undoubtedly dispelled some of the illusions or misconceptions that Western lenders operated under in the 1970's. If the countries in the region continue their recent progress toward restoring their financial viability, one could expect Western creditors to begin to extend fresh loans to them. Most certainly, they will approach this with a more realistic approach than was attributed to them in the 70's.

One new factor is that they are less likely to treat these countries as an undifferentiated group. The experience of the last few years shows that although they share many characteristics, these countries differ considerably in terms of economic policies, official attitudes, resource endowment, economic structure, and any number of the characteristics that influence a country's economic prospects. One can already see evidence of a more differentiated approach by commercial banks in their treatment of the respective countries that have required external financial assistance during the crisis period. It is a safe assumption that this approach will carry over in the event that Western creditors resume lending in the region on a more substantial basis.

Lenders will probably demand, and receive, better and more comprehensive economic and financial data from the Eastern European countries. The quality and quantity of data supplied by these governments has been a problem in the past. The IMF has required better data as input to its periodic reviews of the performance of countries which have standby programs. Other creditors have benefitted from the IMF's efforts in this regard and supplemented them with pressures of their own in connection with debt reschedulings.

Another major lesson is that private and government-backed loans to foreign governments are by no means risk free. Our experience in rescheduling the debts of countries that were in dire straits and later managed to correct their financial situations may have fostered a false sense security on the part of some lenders about lending to the Eastern European governments. The bleak outlook for Poland's repaying its debts, even with a generous rescheduling, should serve to dispel any such illusions that may remain.

Finally, one can no longer assume the Eastern European countries, not to mention their creditors, will be able to look to the Soviet Union to bail them out. The experience of the past few years has proven that the "umbrella theory" was more theory than reality. There are apparently limits to the Soviets' willingness "to take care of their own" in terms of maintaining their allies' creditworthiness. Romania is probably beyond the pale in this regard; only Poland, the most needy of the group, seems to have received—at its lowest point—increased assistance from the Soviet Union. The Soviets are themselves facing serious resource constraints and have little left to share.

III. INTRA-CMEA RELATIONS

OVERVIEW

By Joseph Pelzman *

I. Introduction

During the past 30 years the literature on the Council of Mutual Economic Assistance (CMEA) has undergone some major changes. Initially the questions raised were identical to those raised in the context of the European Community (EC). That is, in a neo-classical framework, did the CMEA as a customs union foster economic integration and thus net trade creation.[1] More recently the literature on CMEA has focused on the role of intra-CMEA trade prices, the impact of rapid increases in the price of energy, the role of external markets and the role of the less developed CMEA countries in fostering economic integration.

The three papers in this section continue this latter literature by focusing on three important questions. First, in the context of current intra-CMEA pricing behavior, who gains from intra-CMEA trade? Secondly, has membership in the CMEA been beneficial to the less developed members of the CMEA? Finally, if one were to focus on the *star* CMEA industry, the computer industry, would one find that it has benefited from CMEA integration programs?

II. Gains From Intra-CMEA Trade

The question of who benefits and who loses in intra-CMEA trade is perennial. The paper by Raimund Dietz, "Advantages/Disadvantages in Soviet Trade With Eastern Europe—the Pricing Dimension," continues the debate found in two earlier papers, one by Lavigne (1983) and the other by Marrese and Vanous (1983).[2] The focus of the Dietz paper is to determine the impact of the post 1973 world market price increases on Soviet intra-CMEA trade prices and on the distribution of the resulting gains and losses. The analytical framework used by the author is based on a comparison of intra-CMEA contract prices with world market prices and with world market prices lagged to reflect changes in the price formula.

Based on this price comparison the author finds that:

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[1] A survey of this literature is provided in Paul Marer and John M. Montias, "CMEA Integration: Theory and Practice", in Joint Economic Committee, East European Economic Assessment, Part 2, pp. 148–195.

[2] Marie Lavigne. 1983. "The Soviet Union Inside COMECON," Soviet Studies, Vol. 35, No. 2, pp. 135–153.

Michael Marrese and Jan Vanous. 1983. *Soviet Subsidization of Trade with Eastern Europe—A Soviet Perspective.* Institute of International Studies. University of California. Berkeley.

Soviet terms-of trade vis-a-vis East Europe have improved by 50% over the 1973–1982 period. Most of this gain is attributed to increased fuel prices within CMEA.

Actual cumulative (1973–1985) Soviet gains from these price increases were estimated at 70.7 billion transferable rubles (TR).

Potential gains to the Soviet Union had world market prices been applied were estimated to sum to TR 106.9 billion over the same period. The difference between the actual and potential gains is attributable to the delay in adapting intra-CMEA contract prices to world market prices. It thus represents foregone gains to the Soviet Union assuming inelastic demand on the part of the East European countries.

Manufactured products relative to raw material and agricultural products were found to be overpriced in intra-CMEA transactions as compared to those conducted at world market prices.

After presenting these results the author points out that unlike the conclusions raised by Marrese and Vanous, his results, "do not ipso facto imply a subsidization of Eastern Europe by the USSR." The major reasons pointed out by the author reflect to a large extent the major caveats of any price comparison such as that presented here. First, world market prices are a questionable yardstick for intra-CMEA prices. Secondly, differences in sector prices may be due as much to productivity differences between East and West Europe as to Soviet potential gains. Finally, the commodity distribution of Soviet-East European trade may be the major factor in the hypothetical Soviet subsidization of East European trade.

A comparison of intra-CMEA prices with those in the West cannot, of course, reveal the gains from intra-CMEA trade nor for that matter who the beneficiaries are. As Jozef M. van Brabant has recently pointed out in a comment on Marie Lavigne's paper, intra-CMEA "commodity prices are determined in bilateral negotiations with a view not so much to maximizing profit as to attaining 'higher goals'. These may include the perceived necessity to ensure bilateral balanced exchange, to promote bilateral collaboration, to procure goods as much as possible from 'friendly' markets, to transfer what is in effect development assistance . . . There are, . . . , serious conceptual problems in using the 'direct price' as a criterion for evaluating the benefits of CMEA economic co-operation since it does not normally reflect the 'full price' of a commodity." [3]

III. EUROPEAN CMEA RELATIONS WITH LESS DEVELOPED NON-EUROPEAN CMEA MEMBERS

While the earlier paper by Dietz focused on the bilateral relationship between the Soviet Union and the developed East European members of CMEA, the paper by Horst Brezinzki, "Economic Relations Between European and Less Developed CMEA Countries," focuses on the current and prospective economic ties between Cuba, Vietnam and Mongolia with European CMEA.

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[3] Jozef M. van Brabant. 1984. "The USSR and Socialist Economic Integration—A Comment," Soviet Studies, Vol. 36, No. 1, p. 128.

The major conclusion of this paper is that the economic relationship between these two groups is an "obstacle to the industrialization" of the less developed members of CMEA. In particular, Brezinski argues that current and prospective economic relations between the two groups lead to "sectoral distortions" in the less developed countries. The current relationship assigns to these countries the responsibility of providing to the developed members such raw products as: coffee, tea, cocoa, citrus fruit, rubber and other raw materials, in exchange for poor quality Soviet and East European manufactured goods.

The author points out that since 1974 the relationship between the developed and less developed non-European CMEA member countries is governed by the following programs:

A long term program designed to integrate five key LDC sectors into the CMEA market. These sectors are: fuels and raw materials, agriculture, mechanical engineering, industrial consumer goods, and transport equipment;

The "Agreed Plan of Multilateral Integration Measures" which includes joint investment in energy and raw materials, specialization in production, measures to increase the standard of living of the LDCs, and standardization of products and technology;

The inclusion of CMEA programs in the member country annual, five-year, and long term plans; and

Granting of credits and lower interest rates to the LDC members.

According to Brezinzki, these special pricing arrangements, have resulted in a 1982 subsidy of $424 million to Cuba, $40 million to Vietnam and $10 million to Mongolia.

In Mongolia this program has resulted in an expansion of investment projects in the non-ferrous industry, fodder production, production of electrical energy, construction material and wood. The predominant supplier of funds for these projects is the Soviet Union. Moreover, as the author points out this industrialization has taken place mainly along the north-south line of the Transmongolian railway, resulting in unbalanced regional development. The author's conclusions are that as a result of Mongolia's ties with CMEA, it has become more dependent on CMEA and especially on the Soviet Union, resulting in continued Mongolian adjustment to Soviet rather than Mongolian needs.

In the case of Cuba, despite the increased role of some East European countries, the Soviet Union remains the dominant trading partner. As Brezinzki points out, "up to 1982 the Soviet Union was involved in 565 projects in Cuba as compared to 140 by the other 6 European members." The majority of these projects are concentrated in sugar, citrus fruit, fish and nickel production. The acceptance of this "CMEA division of labor" as Brezinzki points out leads to greater Cuban reliance on CMEA.

In the case of Vietnam, while the evidence is very brief, it appears that Vietnam is particularly dependent on the Soviet Union for development assistance. In return, the developed CMEA members are primarily interested in Vietnam's deposits of such natural resources as coal, bauxite, tin, lead, zinc, copper, titanium, chromite, manganese, gold, silver and oil and gas.

The author's conclusion based on the joint CMEA projects in these three less developed members of CMEA is that:

> This has forced them into a pattern of international division of labor which seems unlikely to achieve the goal of closing the development gap between the less developed and the industrialized members of the CMEA.

IV. THE CMEA COMPUTER INDUSTRY

Given the importance of a CMEA computer industry, S. E. Goodman in "The Partial Integration of the CMEA Computer Industries: An Overview" points out that it is possible, even within CMEA, to have a successful integration program. The author points out that in this particular industry a somewhat successful attempt was made to integrate the various elements of a single computer industry. It should be noted, however, that this development was based in large part on the ability of the Soviet Union and the GDR to copy, in the early 1970's, the IBM 360 computer family, to be followed by CMEA copies of the IBM 370 computer family, post 1979. The development of microcomputers followed a similar path of imitation.

The major conclusions drawn in this paper are:

> Each of the CMEA members has built a "nontrivial" computer equipment industry;
>
> The borrowed Western hardware and software should minimize CMEA's dependence on future Western computer equipment;
>
> With the exception of Romania, which has not been a major participant in the joint computer program, Goodman points to an increased "evening out" of computer facilities within CMEA;
>
> Continued technical and economic strengthening of the CMEA computer industries is bound to aid Warsaw Pact military capabilities;
>
> To date the CMEA computer industries have not been able to duplicate Western innovation. Furthermore, they have not made improvements over the Western equipment copied. What the CMEA integration program has achieved is not the development of CMEA equipment but rather the elimination of duplication of the copy process. That is, no one member country, had to reproduce the entire 360 or 370 systems;
>
> While the CMEA computer industry is self contained, it suffers from lack of efficiency and imitative innovation; and
>
> The standardization achieved in the CMEA computer industries was primarily and formally established in the West.

The most interesting conclusion of this paper is that it is possible for the CMEA members to work out a joint program if the technical constraints are large enough. What is still left unclear is the role of the Soviet Union in coercing membership in this joint program. Goodman believes that this role was minor relative to the role played by sheer economic and technical need.

ADVANTAGES AND DISADVANTAGES IN SOVIET TRADE WITH EASTERN EUROPE: THE PRICING DIMENSION

By Raimund Dietz *

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* Dr.rer.pol., staff member of the Vienna Institute for Comparative Economic Studies. The author is indebted to his Institute for having largely freed him from other commitments during the time occupied for this project. Thanks are also due to his colleagues for advice and assistance.

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ABBREVIATIONS

bn	billion.
CMEA	CMEA Six plus Mongolia (since 1962), Cuba (since 1972) and Vietnam (since 1978).
CMEA Six	Eastern Europe, i.e., Bulgaria, Czechoslovakia, GDR, Hungary, Poland and Rumania.
CPs	prices of goods traded intra-CMEA (contractual prices).
KSE	Kulkerekedelmi Statisztikai Evkonyv (Statistical Yearbook of External Trade of Hungary).
OTI	opportunity terms of trade-income.
o.t.o.t.	opportunity terms of trade (hypothetical t.o.t. of the USSR vis-a-vis the CMEA Six if CPs had changed as WMPs did).
TI	terms of trade-income.
t.o.t.	terms of trade.
TR	transferable ruble.
VTSS	Vneshnyaya Torgovlya SSR, Statisticheskii Sbornik.
VTSSJ	Vneshnyaya Torgovlya SSSR, 1922–1981, Jubileinyi Statisticheskii Sbornik, Moscow, 1982.
WMPs	world market prices.
WMPLs	world market prices lagged due to the Moscow price formula.

SUMMARY

The USSR's terms of trade (ratio of export to import price index) vis-a-vis Eastern Europe had improved by estimated 48% from 1973 to 1982, and will presumably increase till 1985 to 70%. Since Soviet export and import prices of the same commodity groups rose approximately at the same rate, Soviet terms-of-trade gains resulted because the price index of fuels in intra-CMEA trade rose approximately three times faster than the price index of other commodities, and the commodity composition of Soviet exports to and imports from Eastern Europe is different. The price indices observed show that, whereas the USSR exhausts fully the potential price gains allowed for by the Moscow pricing principle, it probably has not usurped advantages over and above them.

The USSR's terms of trade would have increased much faster if the contract prices had risen at the rate of the world market prices. The difference between the USSR's potential and actual terms-of-trade gains was the largest after each of the two price explosions, and was reduced thereafter. The actual terms of trade gains caught up with the potential terms-of-trade gains in 1984 and will most probably be exceeding them in the next two or three years.

Terms-of-trade changes translate into income transfers. The Soviets have derived additional income from terms-of-trade improvements continuously since 1973. In 1984, it will represent approximately TR 12 billion and will continue to increase at least till 1985. Cumulated actual Soviet gains from price rises will amount to an estimated total of TR 69 bn from 1973–1985, while potential gains (if world market prices had been applied) would have yielded TR 106 bn. The TR 37 bn difference between potential and actual gains

from trade is the cumulated result of the delayed adaptation of contract to world market prices. It may be interpreted as hypothetical gains foregone by the USSR. The application of the Moscow formula has alleviated the East European countries' burden to a certain degree.

Though price changes in intra-CMEA trade have been following the pattern of lagged world market prices, relative prices in intra-CMEA trade and on the world market differ considerably. Manufactures in intra-CMEA are overpriced relative to raw materials and agricultural products, as compared with the price relations on the world market. Defining opportunities as actual world market prices, and given the commodity composition in trade between them, this may be interpreted as an hypothetical disadvantage for the USSR.

Interpreting opportunity costs as subsidies, a recently published U.S. study [Marrese and Vanous, 1983] maintains that the Soviet Union subsidizes Eastern Europe to secure strategic advantages accruing to her from the geostrategic position of Eastern Europe as a cordon sanitaire. Although it is true that the USSR derives strategic advantages by Eastern Europe's adherence to the bloc, and at the same time foregoes hypothetical opportunities (which are considerably overstated in the quoted study), it is not very persuasive to assume that for political and economic reasons the Soviet Union would have to secure her power by deliberately subsidizing the East European countries. In respect to politics, she has clearly more efficient means at hand to assure dominance over Eastern Europe; in terms of economics, opportunity costs do not ipso facto imply a subsidization of Eastern Europe by the USSR, because:

(1) Given the integration of the CMEA countries (politically, systemically and in respect to the relatively low trade involvement with non-bloc countries), world market prices are a questionable yardstick for evaluating intra-CMEA relations.

(2) The overvaluation of manufactures intra-CMEA may be due to productivity differentials between East and West.

(3) The relative overpricing of manufactures applies also to manufactures made in the USSR. Hence, it is not the prices but the commodity pattern of trade that is the cause of a hypothetical disadvantage for the USSR. And it is simply the distribution of comparative advantages that leads to a predominance of raw materials in Soviet exports to and of manufactures in Soviet imports from the CMEA Six.

A comparison of prices East and West cannot, of course, reveal the extent to which the economic relations between the USSR and the CMEA Six, when considered in their totality, bring advantages/disadvantages to either side. The scope of the argument must be broadened to include the promotive or retrograde influences of the socio-economic system prevailing in the CMEA: it is possible for both the USSR and the CMEA Six to be losers in an economic system for which the basic rules were laid down by the USSR.

I. INTRODUCTION

Economic recession in the West and price changes on the world markets did not bypass the CMEA. This paper is concerned with the effects of price changes on the world markets on the pricing of trade between the Soviet Union and Eastern Europe. It investigates the controversial pattern of costs and benefits in Soviet-East European relations from the early 1970s to 1982 and the changes expected in the near future.

The issue deserves attention because:

1. The USSR is both the dominant power in the CMEA region and the main supplier of raw materials.
2. The mechanism and the formula by which world market prices (WMPs) are transformed into intra-CMEA contract prices (CPs) is subject to bargaining and political interference.
3. The Soviet Union could influence the extent and the speed by which the potential burden implied by the price shifts on the world markets, and the structure of its foreign trade with its allies affected Eastern Europe.
4. Did the intra-CMEA price formation mechanism change in response to the historically unique changes of relative world market prices, and if so, in whose favor?

The first problem to be addressed is the selection of proper yardsticks to assess the advantages and disadvantages in trade between the Soviet Union and Eastern Europe.

II. ANALYTICAL FRAMEWORK

The estimates of advantages/disadvantages in trade between two partners presupposes the availability of sufficient information concerning the trade and yardsticks of comparison.

The actual analytical approach depends first and foremost on the yardstick chosen. The choice is determined by the way in which the problem is stated. In a purely formal way, advantages/disadvantages accrue from:

(1) Price differentials in the exchange of identical goods—In this, the simplest of all cases, infringements of the equivalence of the exchange are the easiest to pinpoint. If, for a certain grade of coal supplied to Poland, the USSR were to demand more than it actually pays to Poland for the same grade of coal (disregarding differences in transport patterns, etc.), then one would have a straightforward case of unequal exchange or of direct exploitation through prices. However, no case of direct exploitation through prices either way has become public in intra-CMEA trade after Stalin: in fact, in view of the largely complementary and bilateral nature of that trade, such cases are improbable and we, therefore, shall not pursue it.

The same problem arises in a somewhat weakened form in connection with the price indices of goods belonging to one and the same commodity group. Terms-of-trade (t.o.t.)[1] gains within a given group of goods may be interpreted as evidence of bargaining pressure by the dominant partner (or an indication that the bargaining pressure exerted by the other partner has slackened). Our analysis of price relations in intra-CMEA trade has provided no evidence of gains/losses of this sort: on the contrary, the covariant nature of the evolution of the export vs. import price index for the same commodity groups is striking. We may, accordingly, confine our concern to the two cases outlined below.

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[1] The net barter terms of trade—called here just terms of trade (t.o.t.)—is defined as the ratio of the export price index to the import price index. The gross barter terms of trade is, in contrast, defined as the ratio of the import to the export volume index. While the net barter terms of trade reflects changes of prices, the gross barter terms of trade shows the change in the safest trade flows. The gross barter terms of trade equals the net barter terms of trade in any year in which trade is balanced, provided it was balanced also in the reference year. (Drabek (1981)).

(2) Choice of Base Year.—The choice of a base year is itself tantamount to the choice of a yardstick because it focuses attention upon subsequent changes in exchange relations.

(3) Structural Price Differentials.—There may be differences between price ratios or relative price patterns in the CMEA, on the one hand, and in a reference area, yet to be defined, on the other. Such differentials may, since the commodity pattern of imports is different from that of exports, generate advantages/disadvantages in intra-CMEA trade (or may, at any rate, be regarded as advantages/disadvantages in intra-CMEA relations). The advantages/disadvantages deduced in this way translate, of course, only into hypothetical gains/losses because the selection of the reference area depends on the analyst's viewpoint.

There are three formal yardsticks to measure the advantages/disadvantages in trade between the USSR and the CMEA Six. Only in Case 1 (exchange of identical goods) is it possible to derive a uniquely defined yardstick. In Case 2 (choice of a base year) selection of a year prior to major price changes on world or CMEA markets readily presents itself. In Case 3 (structural price differences), however, we may choose between two very different frames of reference: the world market and the CMEA region. If one makes the assumption that intra-CMEA trade flows should be measured against trade flows with third countries, then logically, one should opt for a comparison in terms of world market prices, which can be defined for the purposes of a concrete calculation in one of three ways:

As the average prices of the principal markets of the commodities traded;

As the foreign trade prices of neighboring non-CMEA countries fully open to the world markets;

As the buying (selling) prices achieved by the USSR and the CMEA Six in their trade with countries fully open to the world markets.[2]

If the CMEA is to be regarded as a closed system inasmuch as the member countries and their relations within the CMEA are characterized by specific forms of economic control and management (central planning, state ownership of the means of production, foreign trade monopoly, non-convertibility of currencies, etc.) and their political aims override their economic ones, and the political aims include the erection and maintenance of fairly high barriers against external influences by the West, then world market prices are a questionable yardstick. If we stipulate that the relative price pattern in trade within a relatively closed economic space is influenced (if not determined) by the pattern of relative productivities in that space, then the relative price pattern within the space will differ from that of the (open) world market.

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[2] Marrese and Vanous (1983), pp. 21-34.

It is useful to recall in this context that an intra-CMEA price formula based on the specific productivity patterns of the CMEA region was seriously considered in the late 1950s and in the 1960s.[3] The CMEA countries agreed—despite the region's high degree of isolation—in principle to apply world market prices in their mutual trade relations—thereby importing efficiency indicators from outside. This they were constrained to do because they are unable to develop an authentic autonomous price mechanism. Of course, opting for world market prices leaves the problem of adequate pricing of intra-CMEA trade unsolved. The practice of intra-CMEA price formation finds its own "solution."

Every CMEA country is a member of the economic and political bloc that is the CMEA and at the same time is also attached to the world market. This double role generates, on the one hand, tensions in intra-CMEA relations; on the other, the need for a compromise between the two roles.

Three price structures are distinguished: intra-CMEA or contract prices (CPs), world market prices (WMPs) and world market prices lagged by the price formula in force (WMPLs). Prices can be expressed either in dollars or TRs. By the insertion of the WMPLs, the difference between the CPs and WMPs is decomposed into the influence of lagging and pure price differences.

III. PRICE CHANGES AND PRICE STRUCTURE IN USSR'S TRADE WITH THE CMEA SIX

III.1. Changes in the USSR's terms of trade with the CMEA and with the non-socialist countries since 1970 (aggregate indices)

Soviet published foreign trade statistics (in VTSS) show annual indices which provide information on the real growth of Soviet exports and imports, overall and by major country groups—socialist countries, CMEA countries (as a subgroup of the socialist countries) and non-socialist countries (i.e., capitalist[4] plus developing countries.)[5]

The indices of Soviet trade with the CMEA overall can be taken as a rough proxy for trade with the CMEA Six, since the Six's share in the USSR's overall trade with the CMEA is about 90%.

It can be derived from official Soviet statistics that the USSR's t.o.t. with the CMEA improved by 48% between 1970 and 1982: since 1972, it improved monotonically. For the same period, the official Soviet data reveal remarkable t.o.t. fluctuations in trade with the non-socialist (and within that, with the capitalist and developing) countries. The two t.o.t. surges in the wake of the two OPEC price hikes were followed by heavy t.o.t. losses in the succeeding years. Only in the years following immediately the two OPEC price hikes did the USSR's t.o.t. vis-a-vis the CMEA lag behind its t.o.t. vis-a-vis the non-socialist countries (Table 1).

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[3] For an overview of the debate on the so-called Internal Price Base, see Ed. A. Hewett (1974), pp. 159-1971.

[4] Separate data for capitalist and developing countries are confined to the recently published Jubilee issue of the VTSS (1922-1981), Moscow 1982 (=VTSSJ).

[5] Some of the published volume figures, particularly those for 1975 and 1976, evidently did not reflect the real-life changes, and were also inconsistent. These data from VTSS (1975) and VTSS (1976) were revised subsequently in the monthly journal of Vneshnyaya Torgovlya 1977/9. The revised figures, however, did not remove all doubts about reliability (Dietz (1979)). This applies also to figures from VTSSJ. (See Annex A.)

TABLE 1.—PRICE AND TERMS OF TRADE CHANGES IN SOVIET TRADE DERIVED FROM OFFICIAL SOVIET VOLUME INDICES

[1970 – 100]

	Total	Socialist countries	CMEA countries	Nonsocialist countries	Developed capitalist countries	Developing countries
EXPORTS						
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	104.1	103.9	102.2	112.1		
1972	105.8	107.3	105.0	109.8		
1973	117.4	109.5	107.6	138.3		
1974	142.8	114.9	113.4	197.3		
1975	164.2	149.6	150.9	190.2	225.5	149.6
1976	176.7	160.7	161.2	206.8	243.8	160.6
1977	189.9	173.3	174.0	216.1	261.8	170.5
1978	197.2	183.8	188.3	218.5	263.3	172.2
1979	233.1	198.0	201.0	294.7	392.3	195.2
1980	268.5	216.7	217.6	361.8	507.7	214.1
1981	307.6	254.1	254.9	400.4	570.9	235.5
1982	320.1	284.9	289.4	378.5		
IMPORTS						
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	102.0	103.2	101.6	99.6		
1972	105.5	105.6	104.9	101.1		
1973	109.3	108.2	106.7	104.5		
1974	127.2	112.7	112.3	144.6		
1975	154.0	140.9	141.6	165.9	173.5	164.0
1976	155.4	146.5	146.3	161.7	167.8	165.5
1977	161.4	152.7	151.4	167.2	169.3	186.7
1978	163.9	159.5	159.5	162.1	164.7	183.9
1979	177.8	166.6	166.7	185.4	187.7	210.6
1980	194.6	177.7	178.0	203.9	207.6	252.0
1981	212.9	191.6	190.9	225.7	228.2	287.7
1982	209.2	195.6	195.2	210.1		
TERMS OF TRADE						
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	102.1	100.6	100.6	112.5		
1972	100.2	101.5	100.1	108.7		
1973	107.4	101.2	100.8	132.3		
1974	112.3	101.9	101.0	136.4		
1975	106.6	106.2	106.6	114.6	129.9	91.2
1976	113.7	109.7	110.2	127.9	145.2	97.0
1977	117.6	113.5	114.9	129.2	154.6	91.3
1978	120.3	115.2	118.0	134.8	159.8	93.6
1979	131.1	118.8	120.5	159.0	209.0	92.7
1980	138.0	121.9	122.2	177.4	244.6	84.9
1981	144.5	132.6	133.5	177.4	250.2	81.9
1982	153.0	145.6	148.3	180.2		

Note.—W. Selzowski, "Die Anwendung der Indexmethode bei der ekonomischen Analyse des AuBenhandels," AuBenhandel der UdSSR, 1979/2, gives some information on the method by which the Soviets calculate their trade volume indices. It implies that the Soviet volume indices are unit value indices of the Laspeyres type and are chained annually, that is, the weights change each year. Thus, the corresponding price index presumably is an annually chained unit value index of the Paasche type. (See also app. A.) Annual price changes were derived by dividing growth indices of values by the corresponding growth indices of volume, then chaining them into an index.

Source: Annex A.

A simple comparison of the USSR's t.o.t. vis-a-vis the rest of the CMEA, on the one hand, and the capitalist and developing countries, on the other, does not provide any definite answers on relative advantages/disadvantages in trade between the USSR and the CMEA Six. First, the commodity composition of Soviet trade with these spheres is not sufficiently comparable.[6] Secondly, that the USSR may subsidize some developing countries (by deliveries of cheap armament?) cannot be excluded, and this could seriously distort its t.o.t. with that group. In trade with the West, fluctuating import prices (particularly of agricultural products) have affected its t.o.t. considerably.

Official Soviet data and the author's calculations of the USSR's t.o.t. vis-a-vis the CMEA Six agree as to the order of magnitude of Soviet t.o.t. gains between 1974 and 1982 (Table 2).[7] The author's estimates of changes in the USSR's t.o.t. are based on two different sets of data. For price changes in 1975–76, Soviet statistics on foreign trade with each CMEA Six country were used (Dietz 1979): all individual trade positions where both value and quantity were presented were included in the calculations. For 1977 and subsequent years this is no longer possible because the most important quantity data were deleted from Soviet statistics. Post-1977, it is only the information available in the Hungarian statistics concerning trade with the USSR that permits the calculation of unit value indices for the individual commodity groups (but, of course, only for Hungarian-Soviet trade). On the assumption that price changes by commodity groups are the same in Hungarian-Soviet trade as in the USSR's trade with the other CMEA Six countries, one may, in possession of the commodity patterns of Soviet imports and exports, estimate the USSR's price indices and t.o.t. with the CMEA Six overall.

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[6] A large part of the USSR's trade with the developing countries cannot be assigned unequivocally to specific commodity groups.

[7] The author had to shift the reference year to 1974 because he lacked the time to perform the devious calculations for 1971 to 1974. Prior to 1975, the year in which the Moscow price formula was first applied, the t.o.t. changes should have been minor.

TABLE 2.—PRICE AND TERMS OF TRADE CHANGES IN SOVIET TRADE WITH CMEA

[A comparison of official Soviet figures with author's estimates]

	Indices						Annual changes					
	A/X	B/X	A/M	B/M	A/T.O.T.	B/T.O.T.	A/X	B/X	A/M	B/M	A/T.O.T.	B/T.O.T.
Year:												
1974	100	100	100	100	100	100						
1975	133	139	126	126	106	110	33.0	39.0	26.1	25.8	5.5	10.5
1976	142	151	130	133	109	114	6.8	8.7	3.3	5.5	3.4	3.1
1977	153	169	135	139	114	122	7.9	11.8	3.5	4.7	4.3	6.8
1978	166	187	142	149	117	126	8.2	11.0	5.3	7.0	2.8	3.8
1979	177	195	148	146	119	133	6.8	4.3	4.5	−1.3	2.1	5.7
1980	192	221	159	173	121	128	8.2	13.3	6.8	18.0	1.4	−3.9
1981	225	261	170	188	132	139	17.1	18.1	7.2	9.0	9.3	8.3
1982	255	296	174	209	147	142	13.5	13.1	2.3	10.5	11.0	2.3

Notes:
A = official figures on trade with all the other CMEA countries.
B = author's estimates on trade with the CMEA Six.
X = Exports.
M = Imports.
T.O.T. = terms of trade.

Sources: VTSS, various editions; VTSSJ; KSE, various editions; author's calculations and estimates; see also Annex A.

All in all, however, there is a fair fit between the two series, except for the price changes of Soviet exports in 1975 and imports in 1980, which result in corresponding differences in the t.o.t. At 5.9%, the official t.o.t. improvement in 1975 appears too low.[8] In 1980, on the other hand, it is the official t.o.t. that seems more realistic, while the import price changes calculated by the author deviate both from the official Soviet indices and from the effects that should flow from the logic of the price formula. One possible explanation is the repetition of a pattern observed by Hewett[9] in the 1960s, notably that the prices of the USSR's imports from the other CMEA countries exhibit greater irregularities and deviate much more from the trends that could be derived from the price formula based on actual price shifts on the world market. So far no satisfactory explanation has been given.

III.2. Price shifts in the USSR's trade with Hungary (1975–82)

As calculated from the unit value indices, the t.o.t. from the point of view of the USSR improved between 1975 (the introduction of the Moscow price formula) and 1982 by 47%, as the result of export prices increasing by a factor of almost three and import prices by a factor of two. The ruble prices of the Soviet deliveries of fuels and energy rose during this interval by a factor greater than five; this, as we shall see in more detail, corresponds to the rise of the WMP of petroleum, dampened by the price formula. The price rises of the other commodity groups show few distinctive features: the coefficients of increase were in the range of 1.8 to 2.25. However, the unit value indices of manufactures exaggerate pure price increases, reflecting as they do also certain improvements of quality within the more or less closely defined commodity group positions. Even the prices of food products, for which the USSR has developed a considerable import demand in recent years, and which Hungary has been selling predominantly at immediate (non-lagged) world market prices, fail to reveal any unexpected surges.

By and large the export and import prices of the same commodity groups have been rising at the same rates.[10] Consequently, the USSR's t.o.t. gains derive from the commodity pattern of its imports differing from that of its exports. Thus, one may exclude direct "exploitation effects" insofar as such effects could be revealed by a comparison of price indices.

Table 3 reveals that, while the commodity pattern of Soviet imports from Hungary changed little during the period, that of Soviet exports to Hungary underwent a considerable shift. Soviet exports to Hungary expanded greatly thanks to the marked price rise of fuels and energy. Since the end of the 1970s, exports to Hungary have been stagnating, in order to avoid the USSR building up excessive trade surpluses. On the import side, commodity pattern shifts are minor: to offset its t.o.t. losses, Hungary boosted exports in practically every commodity group. Machinery and equipment continues to make up more than 40% of Hungarian exports to the USSR; the share of the industrial consumer goods group, on the other hand, has been declining somewhat. This, in turn, was offset by a marked growth in the deliveries of grain and meat (ETN 7). Alas, the share of unspecified trade (ETN 10) has also been increasing, detracting from the accuracy of the estimates.[11]

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[8] For the explanation of the difference of 6.3% in the export prices for 1975, cf. Dietz (1979).

[9] "Soviet export prices move according to a fairly uniform principle, while import prices show economically inexplicable behaviour." Hewett (1974), p. 95.

[10] Information is lacking for some imported commodity groups. The indices for raw materials for food and for metals imported into the USSR (SITC 2b)1 lack significance because trade in those groups is neglected.

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[11] One can presume that a considerable share of Soviet imports in ETN 10 consists of hard currency trade in agricultural products.

TABLE 3.—UNIT VALUE INDICES IN SOVIET TRADE WITH HUNGARY

	ETN	Percentage shares 1974	Unit Value Indices, 1974 = 1.00 (ruble prices)								Percentage shares 1982
			1975	1976	1977	1978	1979	1980	1981	1982	
	Exports:										
1	Machinery	24.3	1.16	1.39	1.60	1.68	1.65	1.90	2.02	2.11	15.5
2a	Fuels	18.2	1.85	1.98	2.32	2.76	3.08	3.45	4.35	5.24	44.5
2b	Ores and metals	21.0	1.34	1.29	1.36	1.45	1.44	1.71	2.00	2.12	8.7
3	Chemicals	4.8	1.28	1.39	1.51	1.61	1.60	1.71	1.92	1.99	4.9
4	Construction materials	1.2	1.59	1.63	1.62	1.63	1.54	1.91	2.13	2.18	.7
5	Raw materials of agricultural origin	14.0	1.40	1.49	1.61	1.80	1.87	2.00	2.22	2.27	8.4
7	Raw materials for foods	.1	1.01	.97	.97	.99	.95	1.03	1.07		0
8	Foods	.3	1.41	1.47	1.48	1.52	1.45	1.59	1.78	1.88	.2
9	Industrial consumer goods	2.7	1.11	1.24	1.27	1.37	1.37	1.47	1.64	1.79	1.9
(10)	Non-specified goods	13.4									13.3
	Total	100.0	1.40	1.50	1.69	1.88	1.97	2.22	2.62	2.96	100.0
	Imports:										
1	Machinery	44.8	1.26	1.42	1.46	1.58	1.53	1.82	1.98	2.24	43.2
2a	Fuels	0									0
2b	Ores and metals	3.2	1.03	1.03	1.08	1.06	1.07	1.37	1.21	1.20	.7
3	Chemicals	1.0	1.30								1.6
4	Construction materials	0									.1
5	Raw materials of agricultural origin	.8	1.43	1.54	1.87	2.06	2.00	2.17	2.20	2.24	.9
7	Raw materials for foods	1.3	1.28	1.16	1.42	1.52	1.53	1.88	2.16	2.10	4.6
8	Foods	15.5	1.30	1.32	1.43	1.40	1.49	1.66	1.84	1.89	16.3
9	Industrial consumer goods	23.3	1.22	1.15	1.19	1.30	1.30	1.53	1.68	1.84	15.9
(10)	Non-specified goods	10.1									16.0
	Total	100.0	1.25	1.30	1.36	1.45	1.43	1.68	1.84	2.01	100.0
	Terms of trade:										
1	Machinery		.92	.98	1.10	1.06	1.08	1.04	1.02	.94	
5	Raw materials of agricultural origin		.98	.97	.86	.87	.94	.92	1.01	1.01	
8	Foods		1.09	1.12	1.04	1.08	.97	.96	.96	1.00	
9	Industrial consumer goods		.91	1.08	1.07	1.05	1.05	.96	.98	.97	
	Total		1.12	1.15	1.24	1.30	1.38	1.32	1.42	1.47	

Sources 1975–76: Author's unit value indices calculations from VTSS (see Dietz (1979)), 1977–82; KSE for price changes and VTSS for weights. For details see annex A.

III.3. Changes in the USSR's Terms of Trade with the Individual Countries of the CMEA Six Group

The USSR's t.o.t. gains were not uniform vis-a-vis each CMEA country. A rough estimation of those gains is possible on the assumption that the USSR's foreign trade prices for the individual commodity groups changed at the same rate vis-a-vis the other five countries of the CMEA Six as vis-a-vis Hungary. Even so, differences in the commodity patterns of exports and imports result in substantial deviations from the average in the case of some of the countries.

The USSR's t.o.t. gains during 1975–1982 were the greatest vis-a-vis Czechoslovakia (56%) and the least vis-a-vis Poland (20%). The relatively small overall gains in the latter relation are explained by the rising prices of coal imports from Poland, whereas in the case of the other countries, the differences should be due largely to the different shares of fuels and energy in total exports by the USSR. This share was, in 1982, 60% in the case of Czechoslovakia, and about uniform at 50% or so in the case of Bulgaria, the GDR, Hungary and Poland. In the case of Rumania, the share of fuels and energy was only 20%.

TABLE 4.—CHANGES IN THE USSR'S TERMS OF TRADE VIS-A-VIS THE CMEA SIX COUNTRIES (1975–82)

[1974 = 1.00]

	Exports	Imports	T.O.T.	Percentage of fuels and energy in Soviet exports (1982)
Bulgaria	2.96	2.06	1.44	50
Czechoslovakia	3.21	2.05	1.56	60
GDR	2.98	2.03	1.47	51
Hungary	2.96	2.01	1.47	48
Poland	2.86	2.39	1.20	51
Romania	2.52	2.02	1.25	20
CMEA Six	2.96	2.09	1.42	50

Note.—Method: Soviet price changes in 1975 and 1976 are based on unit value indices derived from Soviet unit value data with each CMEA Six country (Dietz (1979)), for 1977 and thereafter annual price changes in the U.S.S.R.'s trade with Hungary in each commodity group (see table 3) were used. The price changes in question were then weighted by the commodity composition of the preceding year of the U.S.S.R.'s trade with each CMEA Six country. Indices were derived by chaining total price changes.

Sources: VTSS, various editions; KSE, various editions; author's calculations and estimates; for more details see annex A.

III.4. Price Relations in Intra-CMEA Trade and on the World Market

The discussion concerning the distribution of advantages/disadvantages in the USSR's trade with the CMEA Six is, predicated, among other things, upon the assumption that finished goods are overpriced in intra-CMEA trade. The implication is that the ratio of the average intra-CMEA prices to the average WMPs is higher in the finished-goods group than in any other commodity group of similar rank.

The degree of relative overpricing of finished goods is very difficult to estimate because, first, the two commodity ranges—those traded in the world markets, on the one hand, and those traded intra-CMEA, on the other—do not coincide, and their comparison is questionable even where they do. Secondly, the availability of the statistics required for the purposes of such a comparison is grossly inadequate. Thirdly, even if all the data were at hand, the result would depend on the choice of a frame of reference. What are WMPs? Are they the prices recorded in the world market when goods similar as to their use-value parameters change hands *(parameter approach)*, or are they the prices attained when, motivated by necessity, CMEA-made goods are sold on the world market, goods which, in part at lease, were expressly intended for marketing intra-CMEA *(sales approach)*?

In what follows, the most important circumstantial evidence concerning the overpricing of finished goods in intra-CMEA trade is presented (no counterindications have so far been encountered by this author).

4.1. STRUCTURAL PRICE DISTORTIONS: ESTIMATES BY AUSCH AND BY MARRESE AND VANOUS

An important publication by Ausch [12] was the first to provide a detailed picture of price relations and price formation processes in intra-CMEA. His study was based on materials prepared by the CMEA Secretariat for a conference in 1962 in Varna, Bulgaria. Those materials covered the entire intra-CMEA trade and also included documents presented by the CMEA countries concerning applicable WMPs. Ausch stated that in the early 1960s the average discrepancy between the levels of intra-CMEA prices and capitalist WMPs was 39% for machines, 25% for industrial consumer goods, 20% for fuels, while food prices were the same as WMPs.

The distortion emerging from the relative price levels calculated by Marrese and Vanous for the period 1960 to 1978 is of the same sign: it is, however, much greater. For the 1960s, they prove an overpricing of machinery by a factor of 2.5, of consumer goods by a factor of round 2, and of fuels by 1.4 to 1.7 (Table 5). According to Marrese and Vanous, only food commodities were traded at prices corresponding by and large to the WMP levels. (Significant shifts

TABLE 5.—INTRA-CMEA VS. WORLD MARKET PRICES: ESTIMATED RATIOS

	Machinery equipment	Industrial consumer goods	Food and raw material for food	Fuels
Ausch (1969): [1]				
1960	1.39	1.25	[2] 1.00	1.20
Marrese & Vanous (1983): [3]				
1960	2.60	1.91	1.17	1.52
1965	2.59	2.06	1.05	1.56
1970	2.43	1.98	1.06	1.28
1975	2.08	1.86	1.15	.72
1978	2.17	1.89	1.19	.93

[1] S. Ausch (1969), cited in Marer (1972), p. 86–88.

[2] Food only.

[3] Marrese & Vanous (1983), table 12, p. 58. The table is headed by the rather complicated title "Ratio of ruble value of intra-CMEA trade converted into dollars at official exchange rate to ruble value of intra-CMEA trade, by commodity category." To put it more simply, the ratio reflects the average relation of intra-CMEA contractual unit values to world market unit values denominated in dollars (or in rubles if converted by the official dollar/ruble exchange rate).

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[12] Ausch, S., Theory and Practice of CMEA Cooperation (1972); cf. also the digest in Ausch (1969).

in relative price levels in the second half of the 1970s were due to a lagged response to the abrupt changes in the WMPs, that is, to an effect that this chapter does not intend to cover.)

The differences between the findings of Ausch, on the one hand, and Marrese and Vanous, on the other, are due, firstly, to the difference in what they regard as WMPs. The basis of Ausch's calculations is a comparison of CPs and WMPs based on selected use-value parameters. As it pointed out with some emphasis by Ausch himself, price comparisons on such a basis (parametric comparisons) underrate systematically the price distortions because they do not reflect adequately the lower average quality of CMEA manufactures. Marrese and Vanous intended to make up for this bias by applying so-called quality discount ratios, assuming that the quality of manufactures traded between CMEA countries is lower than on the world market[13] by 25–60%. Naturally, the differential of the estimates in question can be due to some extent also to differences in the method and the empirical data base used. Whereas the data on which Ausch's calculations were based embraced thousands of positions distributed so as to provide a fair representative coverage, the data base of the calculations by Marrese and Vanous was somewhat restricted to say the least.[14]

4.2. OVERVALUATION OF THE RUBLE AND RELATIVE PRICE DISTORTIONS

A further indicator of the relative overpricing of manufactures intra-CMEA is provided by the exchange rates used in Hungary (since 1976) and Poland (since 1982) to convert foreign trade prices, respectively in the ruble and non-ruble relation, into forints and zlotys.[15] While the State Bank of the USSR has since the mid-1970s been maintaining the exchange rate of the TR (transferable ruble) between US $ 1.33 to 1.54, these two European CMEA countries reckon the TR to be worth much less (1 TR = 0.6 to 0.8 $ US; Table 6). These internal cross rates express by and large the average costs of generating (by production and marketing) one US dollar and one TR worth of foreign trade income, respectively.

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[13] For a critique of the definition of WMPs and of the use of so-called discount factors to account for the technological lag of CMEA products, cf. also Marer (1984).

[14] Due to the poor data base Marrese and Vanous were not able to calculate the ratio of the CP- to the WMP-level of manufactures. Thus, they had to rely on the data for average price distortions provided by Ausch for 1960. The extrapolations of these data (after applying the so-called quality discount ratios) by use of unit value indices might have led to a systematical bias in favour of manufacture prices, as unit value indices reflect quality changes too which can be assumed to be higher for manufactures than for raw materials. Cf. Marrese and Vanous (1983), p. 161.

[15] These are cross rates, derived, e.g. for the forint, as ruble is equal to dollar divided by forint times forint divided by transferrable ruble which is equal to dollar divided by transferrable ruble.

TABLE 6.—OFFICIAL $/TR EXCHANGE AND IMPLICIT $/TR CROSS RATES IN HUNGARIAN AND POLISH FOREIGN TRADE [1]

	Official Soviet $/TR exchange rate, e_{of}	Hungarian trade			Ratio "r" of cross rate to off. $/TR exchange rate (4):(1) =	Polish trade			Ratio "r" of cross rate to off. $/TR exchange rate
		Ft/$ conversion factor, e_w	Ft/TR conversion factor, e_c	Implicit $/TR cross rate (3):(2) =		Zl/$ conversion factor	Zl/TR conversion factor	Implicit $/TR cross rate (7):(6) =	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1970	1.11	(11.7)	(13.0)	(1.111)	(1.000)	(4.0)	(4.4)	(1.110)	(1.000)
1975	1.343	(8.6)	(13.0)	(1.522)	(1.133)	(3.3)	(4.4)	(1.324)	(1.014)
1976	1.326	41.7	35.8	.859	.648	(3.3)	(4.4)	(1.324)	(.998)
1980	1.541	33.7	28.8	.854	.554	(3.1)	(4.4)	(1.441)	(.936)
1981	1.385	37.0	28.8	.779	.562	(3.1)	(4.4)	(1.441)	(1.040)
1982	1.378	38.9	27.4	.705	.512	84.8	68.0	.802	.582
1983	1.350	42.7	26.2	.614	.457	91.3	68.0	.745	.554

[1] Exports; the conversion rates of imports differ in the fourth decimal only

In (): Conversion factors of the devisa currencies (abolished in 1975 in Hungary and in 1981 in Poland).

Source: WIIW data bank; author's calculations.

The difference between the official dollar-to-ruble exchange rate to the dollar-to-ruble cross rate would be irrelevant for the assessment of foregone gains or opportunity costs in trade between the USSR and the CMEA Six, were it not for certain price ties between East and West. Yet such ties do exist in the raw-material and agrarian-product spheres: we have documented them here for the concrete case of fuels (cf. Table 8).

Whenever WMPs are stable (that is, whenever price lag effects are nil), the CPs of fuels in TR agree by and large with their WMPs in Dollar, divided through the official dollar-to-ruble exchange rate.[16]

Hence, in the raw materials sphere, one is justified in assuming a one-to-one CP/WMP relation, if both prices are denominated in the same currency. The same holds for the agrarian sphere.[17] It is clear, on the other hand, that such a relation cannot possibly hold for manufactures, too.

As pointed out above, "r" defined as the ratio of the implicit dollar-to-ruble cross rates (e_{im}) to the official dollar-to-ruble exchange rate (e_{of}) can be interpreted as the ratio of the average costs (for all goods exported) of generating one TR worth of exports in ruble denominated and of generating e_{of}-units of dollar worth of exports in dollar-denominated trade. If the ratio of average cost levels to earn equivalent amounts of money is r, the ratio of the average price levels of goods which command that amount of money is logically 1/r. That means, for the case in question, that the ratio of the average price level of goods exported to the ruble area and of goods exported to the dollar area is 1/r. Now, if the price ratio is approximately one-to-one for fuels, energy, raw materials and agrarian products, then the overvaluation of manufactures in intra-CMEA must be even larger than 1/r.[18] The implication is that manufactures are relatively overpriced by a factor of from 1.5 to 2.5,[19] or what amounts to the same thing, that raw materials are correspondingly underpriced.[20]

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[16] In the 1960s and in the early 1970, the CPs of fuels tended to be higher than the WMPs (in TR), quite substantially so on occasion. The deviations can be ascribed (a) to the price mechanism intro-CMEA which results in an upward distortion of prices in general (although this distortion was the least for raw materials), (b) to relatively high freight costs (transportation predominantly by land).

In the wake of each of two petroleum price shocks, the CPs for fuels and energy came to lag rather far behind the WMPs, thanks to the delaying effect of the Moscow price formula. By applying the price formula to the WMPs, one obtains a near-perfect fit between the WMPs and the CPs (see Table 8; cf. further P. Marer (1972) and his review of literature and data on price distortions in terms of differentials between CPs and WMPs in the 1950s and 1960s (pp. 52–56).

[17] Cf. Table 5. Extending the proof for this sphere to recent years would require a further research effort.

What one should keep in mind is that the price distortions derived by a comparison of the official with the implicit dollar-to-ruble cross rates are based in effect on a comparison of selling prices, influenced not only by techno-economic factors but also by factors downstream of production (transportation and marketing, conditions of credit and payment, tariff- and non-tarriff barriers, etc.).[21] Mathematically speaking, it makes no difference whether one refers to too high CPs or too low WMPs. Economically, however, it does make a significant difference. Why? Because price differences by too high CPs are an entirely different thing than price differences caused by concessions which foreign trade organizations have made either willingly or under coercion in order to meet foreign-export targets. Such price differences reflect the differences in selling prices (sales approach) and reveal the greater difficulties CMEA-countries experience in marketing their manufactures in Western markets as compared to the relative ease with which they market raw materials.

4.3. DID STRUCTURAL PRICE DISTORTIONS CHANGE?

After 1970, the USSR's t.o.t. vis-a-vis the other CMEA countries started improving. There is the theoretical possibility that these improvements were due, in addition to gains in the fuels and energy sphere, also to a relaxation of the price distortions of the 1960s in intra-CMEA trade. Conversely, it is possible that the USSR allowed a further build-up of price distortions unfavorable to it.

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[18] For a formal proof, see Raimund Dietz, Advantages/Disadvantages in USSR Trade with Eastern Europe—the Aspects of Prices, Vienna Institute for Comparative Economic Studies, Forschungsbericht, Vienna, No. 97, 1984.

[19] As the CPs for fuels and energy go on rising, r may be expected to increase—that is, the price distortion in the manufactures sphere should be expected to decrease at some extent.

[20] This can be proved easily for all commodities for which CPs equal WMPs if denominated in the same currency: For Hungary, i.e., the domestic costs to pay for one unit of imports 1 TR worth from the ruble area was 27.4 FT in 1982, while the import of the same quantity from the dollar area would have implied domestic costs of 53.6 Ft (38.9 × 1.378), and exports of the same quantity to the dollar area would have created export revenues in the same magnitude.

[21] "To establish the level of socialist world market prices in comparison to the capitalist one, it is most common to start from the prices socialist countries are attaining in their sales on capitalist markets. These prices, however, are frequently below the fair level, in consequence of various causes, including the eagerness of the socialist countries to obtain convertible foreign currency, discriminative customs duties, insufficient marketing activity, lack of adequate quality, poor techniques of negotiation and transactions, etc." (Ausch (1969), p. 107).

TABLE 7.—TRADE IN ENERGY AND MACHINERY: PRICE CHANGES AND PRICE RELATIONS IN HUNGARY'S RUBLE- AND DOLLAR-DENOMINATED FOREIGN TRADE

[1970=100]

	Price indices [1] and ratios							
	1975	1976	1977	1978	1979	1980	1981	1982
Dollar area (WMP-indices):								
1. imports fuels	320	308	330	310	453	519	670	663
2. imports machinery	140	140	147	149	154	154	157	160
3. exports machinery	113	111	116	117	120	120	124	127
4. index (2):(1)	.437	.453	.444	.482	.340	.297	.234	.242
5. ratios (3):(1)	.352	.360	.351	.378	265	.231	.184	.191
Ruble area (CP-indices):								
6. imports fuels	201	191	225	254	273	268	321	382
7. imports machinery	110	114	119	117	116	110	112	113
8. exports machinery	114	114	117	117	117	109	111	116
9. index (7):(6)	.545	.598	529	.461	.426	.410	.347	.296
10. ratios (8):(6)	.566	.595	.517	.461	.427	.407	.347	.303
Moscow price formula applied to dollar area indices (WMPL-indices):								
11. imports fuels [2]	[3]170	214	251	294	322	344	384	457
12. machinery [2]	113	121	128	135	142	146	149	152
13. exports machinery [2]	103	106	108	111	113	115	117	119
14. index (12):(11)	.667	.567	.510	.461	.439	.424	.387	.333
15. ratios (13):(11)	.514	.496	.420	.376	.351	.335	.304	.261

[1] Based on forint prices, these indices are therefore not strictly comparable with the unit value indices based on ruble prices.
[2] Five-year running averages of the WMP-indices.
[3] Three year average, 1972–74.

Source: KSE, various conditions; author's calculations.

A comparison of price shifts in different markets presupposes a self-consistent method of index computation. This is feasible in the case of the Hungarian foreign trade price indices. The author has used the ratio of the indices of machinery vs. fuel prices in Hungarian foreign trade to perform a comparison between dollar-denominated and ruble-denominated transactions.

The author has calculated price series for both machinery exports from and imports into Hungary.[22] In its dollar-denominated trade in machinery, Hungary suffered sensitive t.o.t. losses, especially in the first half of the 1970s,[23] whereas in its ruble-denominated trade, export and import prices rose in step, more or less, as an indirect confirmation of our earlier statement (Section III.2) that the USSR did not convert its bargaining power into direct price advantages.

The export prices of machinery were lagging far behind the import prices of fuels in both ruble- and dollar-denominated trade. By 1982, in ruble-area trade the index ratio of machinery import prices to the fuel import prices was only 0.296 (the index ratio of machinery export prices to fuels import prices was 0.303).[24] The machinery-to-fuel terms of trade is seen to have developed even more unfavorably in Hungary's dollar-denominated trade than in its ruble-denominated trade, 0.241 and 0.191 resp. (These indicators shed light on the dramatic burdens under which Hungarian foreign trade must labor these days.)

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[22] Rows 2, 3 and 7, 8 of Table 7. These are true price indices reflecting shifts in actual forint prices, and are therefore not comparable with unit value indices of Table 3.

[23] For an explanation of these t.o.t. losses, cf. A. Marton (1981).

In view of the dampening effect of the Moscow formula, this is not surprising. By applying the Moscow formula to WMP-indices, WMPL-indices and corresponding index ratios can be derived. Naturally, the increases in WMPL-indices are smaller than in the corresponding WMP-indices and the exchange ratio between machinery and fuels did not deteriorate as much as the corresponding WMP-ratio (neither in the case of the machinery-import-to-fuels-import ratio nor in the case of the machinery-export-to-fuels-import-ratio).

Now, how do WMPL and CP-indices relate to each other? The fit between both index ratio series is rather good: The actual degree by which the terms of trade of machinery to fuels deteriorated between 1970 and 1982 (the respective indices for 1982 being 0.296 and 0.303) agree very well with the hypothetical terms of trade losses as calculated by the respective WMPL ratios (whose respective indices for 1982 are 0.333 and 0.261). (The deviation between the two ratios—at times upward, at others downward, of WMPL-ratios—are due to the very great differences between the export and import price indices of machinery in dollar-denominated trade.) The upshot of all this is that the evolution of relative prices in intra-CMEA trade confirms by and large the consequential application of the Moscow pricing principle to WMPs. The data seem to prove once again that, whereas the USSR did, in fact, fully exhaust the potential price gains allowed for by the Moscow price principle, it has not usurped any advantages over and above those.

IV. THE BURDEN ON THE CMEA SIX AND THE FOREGONE GAINS OF THE USSR

IV.1. Prices, Windfall Gains and Losses in the USSR's Petroleum Trade with the CMEA Six

The effects of the sliding-price formula, adopted and introduced in 1975, are demonstrated most impressively by the case of Soviet petroleum exports to the other CMEA countries.

In 1973 and 1974, the price of Soviet petroleum delivered to the CMEA Six increased only marginally, at a time when the WMP of petroleum had almost quadrupled. Clearly, the gain foregone by keeping the intra-CMEA price of petroleum constant was found excessive by the USSR (TR 2.55 billion in 1973 and 1974); it accordingly pressed successfully for a replacement, even before the 1971-1975 Five-year Plan period was out, of the Bucharest price formula which pegged intra-CMEA prices for five years and admitted adjustments only once per five-year plan period (at its beginning). Adaptation to the WMP was thus brought forward by a year and also accelerated:

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[24] 1970 = 1.0.

by the sliding principle (by the annual rather than once-per-five-years modification of prices); and

by the ad hoc introduction of a price based on the average WMP of only three years, 1972–1974, for the year 1975.

In 1975, this procedure raised the petroleum prices charged to the CMEA Six by 86.7%; after 1976, further vigorous raises were applied each year, yet each was gentler than the rise in the preceding year. Had it not been for the second petroleum price shock, the intra-CMEA price of petroleum would have attained the WMP in 1979 or in 1980 at the latest.

Whereas, in the early 1970s, the CP of Soviet petroleum was close to the WMP, in 1974 it amounted to just 30% of the WMP; under the process of adaptation regulated by the Moscow price formula, it had risen by 1978 to more than 80% of the WMP, to decline again below 50% in 1979 and 1980, thanks to the second petroleum price explosion in the OPEC-controlled market. The process of intra-CMEA adaptation thereupon automatically started to raise the intra-CMEA price, and will go on raising it, as far as it is possible to foretell, up to 1986. The WMP in its turn declined in 1982; hence, if the current intra-CMEA price formula remains in force and the WMP remains constant in nominal terms, the intra-CMEA price will have caught up with the WMP by 1985 and will surpass it thereafter. It is conspicuous in Table 8 that the USSR can influence the intra-CMEA price of the following years among other things also by changing the dollar-to-ruble exchange rate. The USSR probably views a strong ruble as a psychological status symbol; nevertheless, a strong ruble depresses contract prices, and vice versa. The devaluation of the ruble against the dollar by 9% in 1984 increased the WMP ruble prices in the same proportion. But it is only fair to add that until 1984 the Soviet Union did not fully match the dollar's revaluation against the main currencies as indicated, e.g., by the exchange rate of the dollar vs. the special drawing rights.

The price negotiations intra-CMEA were clearly based on the petroleum import prices of western Europe (identified as the so-called principal market). Applying the sliding-price formula to these price yields for the period 1975 to 1983 prices in good agreement with the average prices actually asked by the USSR of the CMEA Six. Discounting some separate pricings (pegged prices dating from the 1960s for certain volumes of petroleum delivered to Czechoslovakia and the GDR and hard-currency-denominated deliveries to countries such as Hungary), the prices paid by the CMEA Six for Soviet petroleum are found to be fairly uniform.[25]

The additional burden imposed by the rising prices of Soviet petroleum on the CMEA Six can be estimated using some rather simple assumptions. The counterpart to this additional burden is a windfall gain for the USSR. On much the same basis, one can calculate the hypothetical gain that the USSR foregoes by selling some of its petroleum to the other CMEA countries at prices that, during the period of adaptation, are lower than the WMP, rather than at the WMP proper. The calculations reported on here are based on the assumptions that (1) the USSR could shift to the world market the petroleum it actually delivers to the other CMEA countries without depressing the WMP and (2) the USSR is delivering to the CMEA Six a total of some 70 million tons of petroleum and petroleum products from 1983 to 1985 annually.

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[25] The fair fit between the actual prices and the prices furnished by our model is revealed by a comparison of Columns 5 and 5a, Table 8.

The calculation shows that the price increase of petroleum alone had cost the CMEA Six TR 11.6 billion ($18.1 billion)[26] by 1979. The cumulative gain foregone by the USSR had amounted by that date to an estimated TR 11.1 billion ($15.6 billion). The effect is commensurate with a statement of Radio Moscow, by which the USSR, in its trade with the other CMEA countries (the Six plus Cuba, Mongolia and Vietnam), claims to have foregone a gain of $18 billion (Table 8).[27]

TABLE 8.—SOVIET PETROLEUM BUSINESS WITH CMEA SIX: PRICES, WINDFALL AND FOREGONE GAINS

Year	World market price		Official $/TR exchange rate	World market price TR/ton	CP TR/ton	WMPL TR/ton	Growth rate	Price ratio
	$/bbl	$/ton						
	(1)	(2)	(3)	(4)	(5)	(5a)	(6)	(7)
1972	2.9	21.4	1.206	17.7	15.7			88.5
1973	3.9	28.7	1.358	21.1	16.0		1.9	75.7
1974	11.0	80.2	1.321	60.7	18.1		13.1	29.8
1975	12.0	88.0	1.386	63.5	33.8	30.2	06.7	53.3
1976	12.0	93.1	1.326	70.2	37.1	36.7	9.8	52.8
1977	13.7	100.1	1.358	73.7	46.9	46.7	26.4	63.6
1978	13.8	100.9	1.464	68.9	55.9	57.8	19.2	81.1
1979	19.5	142.6	1.526	93.4	63.6	67.4	13.8	68.1
1980	33.7	246.1	1.541	159.7	74.7	74.0	17.5	46.0
1981	36.5	266.7	1.385	192.5	95.0	93.2	27.2	49.3
1982	33.8	246.9	1.378	179.2	117.4	117.6	23.6	65.5
1983	30.1	219.5	1.350	162.6	139.0	138.7	18.4	85.5
1984	29.0	211.7	1.228	172.4	157.5	157.5	13.3	91.3
1985	28.5	208.0	1.228	169.4	173.2	173.2	10.0	102.3
1986	28.5	208.0	1.228	169.4	.0	175.2	1.1	103.4

	Million tons	TR in millions, cumulated					
		Opportunity windfall gains	Real windfall gains	Foregone gains	Opportunity windfall gains	Real windfall gains	Foregone gains
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1973	55.3	187	17	171	187	17	171
1974	58.7	2,523	141	2,382	2,710	157	2,553
1975	63.3	2,895	1,146	1,749	5,605	1,303	4,302
1976	68.3	3,587	1,462	2,125	9,191	2,765	6,427
1977	71.0	3,974	2,215	1,758	13,165	4,980	8,185
1978	74.5	3,813	2,995	818	16,978	7,975	9,003
1979	76.4	5,783	3,660	2,123	22,761	11,634	11,126
1980	77.5	11,002	4,572	6,429	33,762	16,207	17,555
1981	75.0	13,110	5,947	7,163	46,873	22,154	24,718
1982	70.0	11,300	7,119	4,181	58,162	29,273	28,889
1983	70.0	10,141	8,631	1,510	68,303	37,904	30,398
1984	70.0	10,826	9,923	903	79,129	47,827	31,301

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[26] In current prices transformed by the official $/TR exchange rate (in which the TR is overvalued). The implied $:TR ratio is not the official rate since these figures are cumulated ones.

[27] APA: "Ost-West-Handel," November 11, 1980.

		TR in millions, cumulated					
	Million tons (8)	Opportunity windfall gains (9)	Real windfall gains (10)	Foregone gains (11)	Opportunity windfall gains (12)	Real windfall gains (13)	Foregone gains (14)
1985	70.0	10,618	11,028	−410	89,747	58,856	30,891

Sources and notes by column:
(1) Import prices of the five largest EC-countries.
(5) Till 1976: average unit values for oil and oil products from VTSS, for 1977–81 Dietz (1984); for 1982: weighted average for Polish and Hungarian crude oil import prices; for 1983 Polish data only.
(5a) WMPL (lagged world market price): calculated according to formula except for 1975, where an average over the previous 3 years was applied; for wmp' see (4)
(6) Annual changes of (5), since 1984 of (5a).
(7) Since 1984: (5a):(4).
(8) For 1972–76 from VTSS; for 1977–82 estimated from different sources, for 1983–85 assumption.
(9) (8).((4)–17.7).
(10) (8).((5)–15.7).
(11) (9)–(10).
(12), (13) and (14) (9), (10) and (11) cumulated.

$$cp_t = \sum_{i=1}^{5} wmp_{t-6+i} \, ,$$

As a result of the second petroleum price shock, the burden on the CMEA Six, on the one hand, and the gains foregone by the USSR, on the other, underwent another abrupt hike, also in the current Five-year Plan period.

As pointed out above, by the hypothesis presented, the intra-CMEA petroleum price will reach its maximum level by 1986. If the USSR had asked current WMPs for the petroleum it has been selling to the CMEA Six, between 1973 and 1985, it could have made windfall gains amounting to TR 90 billion because of the lagged Moscow price formula; it will forego TR 31 billion of this sum, so that the actual incremental burden on the CMEA Six over the period in the petroleum trade alone will be TR 59 billion only.

The calculations can be extended to cover the other fuels and forms of energy delivered by the USSR to the CMEA Six. Estimating gas prices is relatively simple, because these follow petroleum prices fairly closely, on a caloric-equivalent basis.[28] In the case of coal, coke and electricity, the inaccuracy of the estimate seems to be somewhat greater. Yet the share of electricity and solid fuels in Soviet deliveries to the CMEA Six is modest enough; also, the share of solid fuels has been declining monotonically in recent years. The outcome of the calculations is presented in the chapter IV.3.

IV.2. Terms of Trade-Income

The next step is to attempt to translate changes in the t.o.t. of Soviet foreign trade with the CMEA Six into changes in income. Our basis is the estimates presented earlier concerning the t.o.t. changes vis-a-vis the CMEA Six. (Cf. Table 2.) The foreign trade income due to t.o.t. changes may be calculated using the formula

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[28] For 1980, 1981 and 1982, e.g., the price per caloric of gas imported by Poland was each 5% less than the price per caloric of petroleum imported for rubles.

$$TI = \frac{X}{P_x} \cdot (P_x - P_m) = X \cdot \left(1 - \frac{1}{t.o.t}\right)$$

where

X = Soviet exports to the CMEA Six, in rubles,
tot = terms of trade,
P_x, P_m = price index of exports/imports,
TI = terms of trade income.

Column 5 of Table 9 reveals that the t.o.t. income has been positive every year since 1973. By 1982, they had attained TR 8 billion for a total Soviet export volume of TR 26 billion. TI is a measure of the potential expansion of import capacity. In 1982 the TI would have financed 33% of the USSR's imports from the CMEA Six. That it did not actually buy that volume of imports was due to the fact that, since the second half of the 1970s, the USSR permitted (or found itself obliged to permit) the CMEA Six to contract a certain deficit in their mutual trade. This deficit does not loom very large in comparison with the TI: its aggregate value over the time interval considered (TR 9.5 billion) just slightly exceeds one-fourth of the cumulated TI (TR 35.7 billion). In other words, up to 1982, the CMEA Six had paid on an average for round 73.5% of the USSR's TI by a real expansion of their deliveries.[29]

TABLE 9.—ADDITIONAL IMPORT CAPACITY DUE TO SOVIET TERMS OF TRADE GAINS VIS-A-VIS EASTERN EUROPE

[in millions TR at current prices]

	T.O.T. (1)	Exports (2)	Imports (3)	Trade balance (4)	Terms of trade income (5)	Share percent (5):(3) (6)	Trade balance cumulated (7)	T.O.T.-income cumulated (8)	Share percent (7):(8) − 1 (9)
1972	100.0	6,726	7,687	−961			−961		
1973	101.0	7,381	8,093	−712	740	.9	−1,673	740	
1974	101.8	8,705	8,600	105	151	1.8	−1,568	224	
1975	112.4	11,866	11,312	555	1,313	11.6	−1,013	1,538	
1976	115.9	13,107	12,226	880	1,799	14.7	−133	3,336	
1977	123.7	15,266	13,852	1,414	2,929	21,1	1,282	6,265	79.5
1978	128.4	16,946	16,776	170	3,750	22.4	1,451	10,015	85.5
1979	135.7	18,549	17,491	1,058	4,885	27.9	2,509	14,900	83.2
1980	136.8	20,919	19,095	1,824	5,624	29.5	4,333	20,524	78.9
1981	141.2	24,300	21,151	3,149	7,096	33.5	7,482	27,619	72.9
1982	144.5	26,295	24,323	1,972	8,098	33.3	9,455	35,717	73.5

Note.—The calculation of TI gains in 1973 and 1974 was based on official Soviet indices, the author's own calculations begin with 1975 only. The official figures and the author's own estimates concerning the T.O.T. changes for 1982 vs. 1974 agree fairly well (table 2). The evolution over time of the aggregate Soviet T.O.T. increase generated by exogenous factors (WMP's, price formula) is represented better by the T.O.T. indices calculated by the author—with the single exception of the strong T.O.T. decline in 1980, due to an unexplained, strong rise in the prices of imports from Hungary (cf. section III.2). For this reason, an averaged price change was applied to 1979 and 1980. Thanks to this modification, the T.O.T. gains computed using the T.O.T. indices calculated by the author correlate considerably better with the windfall gains of the U.S.S.R. out of the energy trade than the T.O.T. income calculated using the official T.O.T. indices.

Sources: Annex A; WIIW-Databank, author's calculations.

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[29] Only three countries were granted sizeable consolidation credits by the USSR: 32% of the total trade deficit, cumulated since 1972, was chalked up by Poland, 31% by the GDR, and 21% by Bulgaria.

IV.3. Changes in Gains Foregone by the USSR

The above calculation of the real burden on the CMEA Six (of the real gains of the USSR) generated by the t.o.t. change raises the question of the improvement in the USSR's t.o.t. and of the corresponding TI, that would have arisen if the intra-CMEA CPs had been raised at the same (unlagged) rate as the WMPs.

Tentatives to estimate such opportunity terms of trade changes (o.t.o.t.) of the USSR on the basis of indices concerning the evolution of WMPs [30] could not be performed for want of an appropriate statistical data base. This obstacle can, however, be circumvented by a somewhat daring artifice.

On the example of the windfall gains arisen in the USSR's petroleum trade with the CMEA Six, it is possible to compute windfall gains for the USSR's entire trade in fuels and energy, given the fact that the CPs of the other fuels and forms of energy can also be calculated to a fair degree of reliability. Comparing Columns 1 and 2 of Table 11, one perceives that the USSR's TI vis-a-vis the CMEA Six equals to within a narrow margin the windfall gains of the USSR's trade with those countries in fuels and energy.[31] For a number of consecutive years, the fit between the two series is quite striking.[32] The implication is that occasional t.o.t. shifts outside the energy sphere had a tendency to cancel out.

The relationship just outlined leads to the conclusion that, if it is the windfall gains in trade in fuels and energy that determine the overwhelming part of the terms of trade income (TI), then the potential (opportunity) windfall gains of the USSR in that trade should likewise be a function overwhelmingly of the potential (opportunity) terms of trade income (OTI). The foregone gain of the USSR can accordingly be derived as the difference between the OTI and the actual TI ("potential" and "opportunity" denoting throughout the gains that would have accrued from the immediate—unlagged—application of WMPs in the USSR's trade with the CMEA Six). (The procedure has the special advantage that it permits to forecast without adducing any further hypotheses both the realizable and the potential terms of trade-income of the USSR, as well as its hypothetical foregone gains up to 1985.)

The results of the t.o.t. computations and forecasts are presented in Table 10. The USSR's t.o.t. vis-a-vis the CMEA Six (1972=100) is seen to have risen to 144.5 by 1982 (or to 150.7, according to the regression equation). The unlagged application of the WMPs would have raised it to 181. The o.t.o.t. has a maximum of 191.9 in 1981 and is shown by our forecast to decline to 170 during 1983–1985. If the trade in fuels and energy will go on determining the evolution of the USSR's t.o.t. vis-a-vis the CMEA Six to the same degree as heretofore, then the actual improvement in the t.o.t. will come level with the o.t.o.t. in 1984 and surpass it in 1985.

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[30] Concerning earlier computations based on UN unit value indices, cf. Marer (1972), Hewett (1974), Kohn (1977), Dietz (1979). However, Kravis and Lipsey (1981) established substantial distortions in the UN unit value indices due to quality changes of manufactures. Besides, since 1980, the UN Monthly Bulletin of Statistics has ceased to publish unit value indices by regions and commodity groups.

[31] The correlation coefficient between the TI and the windfall gains due to the impact of the WMPs on the prices of Soviet fuel and energy deliveries to the CMEA Six for the years since 1972 is $r=0.986$; the estimated parameter of the regression equation is $TI_t=0.9174$ WGE (the constant was suppressed) for $t=1972, \ldots, 1982$ where WGE=windfall gains in the USSR's trade in fuels and energy with the CMEA Six.

[32] Significant discrepancies are confined to the years 1981 and 1982, where the t.o.t. changes calculated by the author are likely to be less than the true t.o.t. changes.

TABLE 10.—THE USSR'S ACTUAL AND OPPORTUNITY TERMS OF TRADE VIS-A-VIS THE CMEA SIX

	t.o.t. (1)	t.o.t. estimated (2)	Opportunity t.o.t. (=o.t.o.t.) (3)
1972	100.0	100.0	100.0
1973	101.0	100.2	104.3
1974	101.8	101.7	132.3
1975	112.4	111.4	130.2
1976	115.9	113.6	134.3
1977	123.7	118.9	135.2
1978	128.4	124.4	133.0
1979	135.7	128.5	147.3
1980	136.3	133.2	182.0
1981	141.2	139.4	187.9
1982	144.5	148.2	177.6
1983		155.2	165.7
1984		163.5	169.4
1985		170.6	168.1

(1) tot for 1973 and 1974, derived from official Soviet volume indices, of VTSS; for 1975 and 1976 author's calculations of unit value indices based on VTSS; for 1977–82 calculations of unit value indices based on KSE. Various editions. For method see appendix A.

(2) tot estimated, tote. Since TIE = X/1-1 tote = X/X-TIE).

(3) opportunity tot, otot = (X + FGE)/(X + FGE-OTI); for OTI see table 11, note (5); for FGE see note (6). FGE (foregone gain estimated, see table 11, note (7)) must be added to X since with the export volumes unchanged (opportunity) world market prices in Soviet trade with the CMEA Six would have made Soviet exports equal to X + FGE, and for 1983–85, incremental TIE vs. 1982 must be added to X, for analogical reasons.

From the t.o.t. series, it is possible to derive both the corresponding realized and foregone income effects, and to forecast them for the next few years.[33] All these have been computed and presented both year by year and in cumulative amounts.

The data in Table 11 quantify the advantages/disadvantages accruing to the USSR from the price changes since 1972, that is, the incremental transfer of funds from the CMEA Six to the USSR and the USSR's hypothetical gains foregone.

TABLE 11.—ACTUAL AND FOREGONE GAINS IN THE USSR'S ENERGY [1] AND TOTAL TRADE [2] WITH THE CMEA SIX SINCE 1972

[TR million in current prices]

Year	Terms of trade-income (1)	Windfall gains in energy exports (2)	Terms of trade-income estimated (3)	Opportunity windfall gains in energy exp. (4)	Opportunity terms of trade income (5)	Changes in foregone gain (6)	Changes in foregone gain estimated (7)
1973	74	20	18	354	315	241	297
1974	151	168	154	3,111	2,767	2,616	2,618
1975	1,313	1,364	1,251	3,620	3,219	1,906	2,006
1976	1,799	1,761	1,616	4,453	3,960	2,162	2,394
1977	2,929	2,735	2,509	5,080	4,517	1,588	2,085
1978	3,750	3,744	3,434	5,057	4,497	747	1,168
1979	4,885	4,632	4,250	7,680	6,829	1,945	2,710
1980	5,624	5,862	5,378	14,488	12,883	7,260	7,670

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[33] As has been already pointed out, the actual sequence in computation, however, was partly reversed. (See also notes to Tables 10 and 11.)

TABLE 11.—ACTUAL AND FOREGONE GAINS IN THE USSR'S ENERGY [1] AND TOTAL TRADE [2] WITH THE CMEA SIX SINCE 1972—Continued

[TR million in current prices]

Year	Terms of trade-income (1)	Windfall gains in energy exports (2)	Terms of trade-income estimated (3)	Opportunity windfall gains in energy exp. (4)	Opportunity terms of trade income (5)	Changes in foregone gain (6)	Changes in foregone gain estimated (7)
1981	7,096	7,724	7,086	17,250	15,328	8,233	8,460
1982	8,098	9,639	8,843	15,480	13,765	5,668	5,210
1983		11,635	10,674	13,315	12,345		1,973
1984		13,281	12,184	13,315	13,036		1,112
1985		14,473	13,278	13,315	12,786		−467

[1] Due to rises in energy prices.

[2] Due to changes in t.o.t.

Notes:

(1) Terms of trade income = X. (1 − 1/tot) X = Soviet exports to Eastern Europe.

(2) Windfall gains in energy exports, WGE were derived analogusly to those of Soviet oil exports to Eastern Europe (table 8, column 10) by estimating the share of oil revenues in total energy revenues and by dividing the latter by this share.

(3) Terms-of-trade income estimated, TIE. Linear homogeneous regression equation $TI_t = 0.889\ WGE_t$ (t = 1972, . . . , 1982) has been extrapolated for t = 1972, . . . , 1985.

(4) Opportunity windfall gains in Soviet energy exports OWGE; analogously to (2).

(5) Opportunity terms of trade income, $OTI_t = 0.889\ OWGE_t$. Regression coefficient of linear homogeneous equation $TI_t = 0.889\ WGE_t$ was used as a proxy.

(6) Foregone gain, $FG_t = OTI_t, - TI_t$ for t = 1972, . . . , 1982.

(7) Foregone gain estimated, $FGE_t = OTI_t, - TIE_t$, for t = 1972, . . . , 1985.

Source: Wharton Centrally planned economies energy databank, June 1983; WIIW-data bank; author's calculations and estimates.

IV. 4. A Confrontation of Results: Marrese's and Vanous' "Subsidies" vs. the Author's Estimate of the USSR's Foregone Gains

The empirical chapters are to be concluded by a comparison of the author's own computations and estimates with the quantitive findings of Marrese and Vanous concerning the USSR's foregone gains in its trade with the CMEA Six. In view of the differences in method between the two studies, a common denominator must be found as a precondition to the comparison envisaged. Marrese and Vanous have calculated the absolute magnitude of the USSR's foregone gains in its trade with the CMEA Six for the years 1960 to 1978: they call the foregone gains "subsidies." [34] The author has calculated only the increments of the USSR's foregone gains against those of 1972, otherwise the two items have the same economic content. We can, therefore, compare the changes in the "subsidies" estimated by Marrese and Vanous with the foregone gains of the USSR as from 1972. So as to make the findings comparable, some slight modifications were necessary.[35]

The author's calculations have corroborated the general trend, but not the magnitude of the USSR's foregone gains in its trade with the CMEA Six, as calculated by Marrese and Vanous. The quantitative results are in considerable disagreement. Marrese and Vanous find that, owing to relatively lower export and/or higher import prices, the foregone gains increased by TR 5.2 billion between 1972 and 1974; the author's estimate is only TR 2.6 billion, and it is followed by a reduction of foregone gains as from 1975, the year in which the Moscow formula was first applied. By the author's findings, the reduction continues up to 1978, with a slight intermission in 1976, which reflects the transition from the three-year average, confined to 1975, to the five-year average applied in and after 1976. In contrast, Marrese and Vanous found that the "subsidies" kept rising up to 1977. Such an evolution would be conceivable only if the USSR had made substantial price sacrifices over and above the lag prescribed by the price formula (in other words, if the structural price differences had in these years changed substantially against the USSR). However, in possession of the information and findings available so far, this eventuality can be excluded with some confidence.

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[34] Their approach is presented and criticized in Section V.2.

[35] Marrese and Vanous calculated opportunity costs in dollars; for the transformation of these into TR an exchange rate had to be used which was derived from their price study (which they called the settlement exchange rate). It replaces the official exchange rate, which considerable overvalues the TR, by a more realistic one.

TABLE 12.—A COMPARISON OF THE MARRESE & VANOUS ESTIMATES OF SOVIET "SUBSIDIES" AND THE AUTHOR'S ESTIMATES OF SOVIET GAINS FOREGONE IN TRADE WITH EAST EUROPE, 1972–78

	Marrese & Vanous estimates and derived figures						Authors estimate	
	Subsidies $ million (1)	Incremental subsidies vs. 1972 $ million (2)	Settlement exchange rate $/Rbl (3)	Subsidies TR million (4)	Incremental subsidies vs. 1972 TR million (5)	Opportunity t.o.t. implied percent (6)	Soviet foregone gains TR million (7)	Opportunity t.o.t. percent (8)
1972	662	....	0.72	919	....	100.0	....	100.0
1973	1,628	966	.84	1,938	1,019	115.0	241	104.3
1974	6,265	5,603	1.03	6,082	5,163	162.1	2,616	132.3
1975	5,325	4,664	.89	5,984	5,065	160.4	1,906	130.2
1976	5,596	4,935	.82	6,825	5,906	168.1	2,162	134.3
1977	5,938	5,276	.84	7,069	6,150	173.6	1,588	135.2
1978	5,754	5,092	.85	6,770	5,851	172.8	747	133.0

(1) Marrese & Vanous (1983), p. 43.
(3) Marrese & Vanous (1983), p. 104.
(4) (4) = (1)*(3).
(6) The opportunity t.o.t. was derived from Marrese's & Vanous' "subsidies" by (X + DSR)/(X + DSR − (TI + DST), where DSR incremental subsidies vs. 1972 (column (5)). TI terms of trade income, see table 9; see also note (3) to table 10.
(7) Table 11.
(8) Table 10.

Note.—Compare columns (5) and (7) and columns (6) and (8).

The author's estimates give for the USSR's actual t.o.t. (for the unlagged application of WMPs) in its trade with the CMEA Six a change of 34.3% between 1972 and 1978, whereas the figure that can be derived from the data of Marrese and Vanous is 72.8%.[36] This latter figure is consistent neither with the price changes in the world markets, nor with the commodity structure of the USSR's trade with the CMEA Six.[37] From this it follows that Marrese's and Vanous' estimates on the gains foregone by the USSR in its trade with Eastern Europe has a considerably upward bias.

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[36] On the assumption that the improvement in the USSR's actual t.o.t. was 28.4% over the years 1973 through 1978, as estimated by the author (Table 9).

[37] Data in Soviet publications state that the USSR's t.o.t. vis-a-vis the Western industrial countries improved by "only" 59.8% between 1970 and 1978 (Table 1; the base 1972 is unavailable); that is, the improvement was less by 13 percentage points than what is implied by Marrese's and Vanous' data, even though the USSR's exports to the West concentrate much more on fuels and fuel products, hit harder by the price rises.

V. ANALYSIS

V.1. Contract Prices and World Market Prices—Why Do They Differ?

Relative advantages/disadvantages in trade between the USSR and the CMEA Six could be derived from a confrontation of intra-CMEA CPs and WMPs only if WMPs were acceptable as an exclusive yardstick of assessment of trade flows within the CMEA. This, however, is not the case because the CMEA (still) is a region closed to a significant extent, and that not only because its relations with third countries still carry a relatively small weight as compared with the CMEA countries' aggregate GDP, but also for political and systemic reasons.

The political target function of the CMEA—and especially of the USSR, the leading power of the group—places a premium on a comparatively high degree of isolation of the bloc, an aim that is furthered by the economic system of central planning. On the other hand—in conflict with the systemic and strategic-political orientation of the bloc—the economic system produces a systemic vacuum which forces the CMEA countries to apply in their mutual relations yardsticks of efficiency that have evolved in third markets, meaning in essence the world markets: it is, however, one of the aims of the group to keep the influence of such world markets closely confined for political and economic reasons. In fact, our analysis has revealed the influence of the WMPs upon price formation in intra-CMEA trade to be a partial one only. What remains to be shown is how, despite the obligation in principle taken by the CMEA member countries to use world market prices in their mutual relations, price differences can and in fact must arise.

In giving an interpretation, it is indicated to keep in mind the above-outlined distinction between foregone gains arising out of differences in price patterns and foregone gains due to the time lag inherent in the pricing formula adopted. The two kinds of hypothetical foregone income are perceived as being due to entirely different causes: the structural differences in price patterns are due to the specific nature of the price mechanism operative in intra-CMEA trade, whereas the time lag is due to the price formula. Now, the distinction between mechanism and formula is of a considerable importance for an understanding of intra-CMEA economic relations. The price formula is the outcome of a political process, of highest-level decision-making by the participating states. The formula is a norm. Changing it entails an immediate change in the mathematical relationship between the world market price and the intra-CMEA price of a good (or of a group of goods). The price mechanism is different in that its operation is a more or less day-by-day, humdrum process that involves several different levels of the foreign-trade bureaucracy. Being as they are fictive indicators determined in formalistic ways, and representing as they do the prices of this or that major non-CMEA market in the form of averages, indices, etc., "world market prices" are not generated automatically. In fact, the "world market prices" used as yardsticks in intra-CMEA trade are prices negotiated by intra-CMEA bargaining. The bargaining process is, as it is known, particularly complicated when the prices of finished goods (which make up the bulk of the items traded at any one time) are being set. Furthermore, separate rules hold for a number of goods groups (e.g., spare parts).[38]

Just as the formula is different from the mechanism, so is the impact of the one different from that of the other. The processes of adaptation triggered by external price changes are transient: as soon as the adaptation has been carried through, the resulting foregone incomes disappear.

Structural differences in price patterns, on the other hand, are clearly a different matter (cf. Section III.4). The overpricing of finished goods relative to base materials [39] arises, according to Ausch [40] because a) the prices documented by the importers and exporters (from which the intra-CMEA guideline prices are derived) cover a much broader range in the case of finished goods than in the case of base materials, and b) in price bargaining, it is the exporters who tend to gain the upper hand.

In Ausch's view, it is the suppliers' costs in the final reckoning that determine the prices of finished goods in intra-CMEA trade, it being impossible in actual fact to identify WMPs for most of these (and because the parameters of comparison used to derive the price of a CMEA make from that of a good traded in the OECD markets may also be unsatisfactory).

This explains the reasons for the deviations between CPs and WMPs (or, more precisely, between CPs and lagged WMPs—WMPLs), but still does not reveal why the systemic-systematic distortion of relative prices is so strong. As already mentioned, relative productivities in the CMEA region presumably deviate rather dramatically from relative price patterns of the world market, so that (not least owing to the supply constraints that exist in the CMEA region), it seems entirely justified for the CMEA to have different relative price patterns of its own.[41] This can be verified on the example of farm goods; comparatively homogeneous commodities whose world market prices are relatively easy to identify. The insistence on the use of WMPs in a setting of agro-technical conditions, at that, which are presumably none too different from those prevailing in Western European countries, keeps ruble-denominated trade in farm goods stagnating at very low levels.

A consequential application of WMPs in each commodity group would thus presumably block a sizeable share of intra-CMEA trade. In the finished-goods sphere, it is clearly the vagueness of the price mechanism that permits a relative overpricing without which considerable parts of intra-CMEA trade could not exist.

The overpricing of manufactures—or the underpricing of fuels and raw materials—does not ipso facto imply a price discrimination against (and, in all likelihood, deliberately accepted by) the USSR, and this for two reasons:

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[38] Pécsi (1980), p. 182.

[39] Ausch's considerations date from the 1960s, but as pricing practice has remained virtually unchanged since in its underyling principles, it is justified to assume that his argument has remained valid to this day.

[40] Ausch (1969), p. 110.

[41] Holzman (1974) based his critique of Mendershausen (1959 and 1960), who believed to be able to derive from unit-value comparisons in the USSR's trade with Eastern and Western Europe a price discrimination against the USSR, likewise on differences in relative cost patterns (pp. 269-291).

(1) The stipulation that the CMEA should apply immediate WMPs would be unfair: the principle of an equal share-out of mutual advantages, so frequently postulated by the CMEA countries in their trade relations, which in the given circumstances (the simultaneous openness and closeness of the CMEA space) demands at least some reference to the CMEA countries relative cost patterns, would be systematically destroyed.[42]

(2) The relative overpricing of manufactures applies also to finished goods made in the USSR. It is not the prices but the commodity pattern of trade that would permit to derive a hypothetical disadvantage suffered by the USSR. Now, it is entirely unintentional that this hypothetical disadvantage is against the USSR, for it is simply the distribution of comparative advantages that leads to a predominance of raw materials in Soviet exports to and of manufactures in Soviet imports from the CMEA Six. "Members of the bloc necessarily forego opportunities to sell outside the bloc at higher prices and buy outside the bloc at lower prices than the going price within the bloc. This is part of the cost of autarky." [43]

We have found structural deviations between the CPs and the WMPs.[44] we have explained these deviations in terms of factors that are consequences of the specific situation of the CMEA as an economic region and system. The extent to which these factors actually influence price decision in intra-CMEA could not be established: it could hardly be quantifiable, in any case. At the same time, structural price differences have proved to be quite persistent, probably caused by relatively stable productivity differentials between East and West.

Let us now consider the evolution in time of the link between the CPs and WMPs. In Chapters III and IV, we have found a clear-cut connection between CPs and WMPs, with the rider that, of course, the CPs vary in step not with the WMPs but with the WMPLs (the WMPs lagged by the Moscow Formula). The two time series were found to evolve almost perfectly in step, which is quite remarkable in view of the considerable differences of a structural nature.

In 1975 the Bucharest pricing formula was replaced one year before its expiry, by the Moscow price formula, on the urging of Moscow. The formula should be regarded as a compromise in several respects:

(1) It is intermediate between the old (Bucharest) formula (which would have considerably delayed the adaptation to the WMPs), on the one hand, and a direct transition to straight WMPs, on the other.

(2) As regards the effect of the price explosion of raw materials on prosperity, the Moscow price formula spread this effect out over several years and thereby gave the CMEA Six time to adapt to the new situation.

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[42] Holzman (1974, p. 276) formulated his criticism of Mendershausen, who, for the second half of the 1950s, stipulated the converse case, that of a price discrimination by the USSR against the CMEA Six, as follows: "The apparent discrimination is not real discrimination in an exploitative sense, for if the Soviets accepted world prices. . . . in their trade with the bloc (the CMEA Six), they would, in effect, be allowing the bloc to take advantage of them."

[43] Holzman (1974, p. 271).

[44] More accurately: WMPLs (world market prices lagged by the applicable intra-CMEA pricing formula, the Moscow formula since 1975).

Thus, there were two adverse developments on the side of the CMEA Six and only one on the side of the USSR: the advantages were, of course, mirror images of the disadvantages. The disadvantages to the CMEA Six were, one, the evolution of the WMPs to their detriment, and, two, the change in the price formula, also to their disadvantages; the disadvantage to the USSR was the necessity of renouncing part of a potential gain. Once the adaptation to the changed relative-price pattern of the world markets has taken place, however, the burden on the CMEA Six will remain, whereas the foregone gain of the USSR will fade in retrospect to an ephemeral episode.

The compromise was certainly not an easy one for the CMEA Six: it probably burdened them to the limits of their forces because

The CMEA Six countries have supply-constrained economies;

After 1975, they have found themselves obliged to expand exports to and constrict imports from the West in real terms, in their striving, first, to prevent the further growth of their trade deficit with the West, and later on, under the constraint to achieve surpluses in hard currencies;

Within the CMEA, trade credits play a subordinate role for systemic and institutional reasons, so that any t.o.t. erosion must be offset in its bulk by a direct expansion of deliveries and/or by a direct reduction of imports; and finally because

The advantages to the CMEA Six, inherent in the lagged pricing formula, have presumably been canceled (at least partly) by systemic rigidities, for which the USSR is responsible in a large part, in its striving to undershore its hegemony by supporting specific socioeconomic structures.[45] The point of departure to be considered here is that economic systems with a (considerable) price elasticity with which to react to external influences are in a much better position to work external price shocks and t.o.t. deteriorations than systems whose price elasticity is slight.[46]

From the point of view of the USSR, the new (Moscow) price formula is a compromise: on the one hand, it has improved the USSR's position against the Bucharest pricing formula; on the other hand, it can be perceived as a middle-of-the-road solution between a maximization of the USSR's national advantage in a strict economistic sense and the broader aim of maintaining the stability of the bloc, as a whole, which is also in the USSR's national interest. Here, the USSR may be assumed to have pondered its foregone gains against the rise in the real burden on the CMEA Six, which certainly had something of a destabilizing influence on those countries.

(3) The new Moscow price principle is a compromise in a system theoretical sense too. It attempted to create a path between two pitfalls: on the one hand, it disrupted the intra-CMEA trade mechanism, since prices fixed just once per five-year plan period would have greatly facilitated the coordination of the individual CMEA

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[45] What we have in mind here is the relation between static price effects on the income flows, on the one hand, and dynamic lagged or side effects on productivity and development potentials, on the other. This problematique is a crucial one for the CMEA.

[46] Cf. Neuberger and Tyson (1980).

countries' plans. On the other hand, however, by accelerating the adaption of intra-CMEA prices to the WMPs, the sliding price formula prevented a further exacerbation of frictions in intra-CMEA trade that would have arisen of necessity if the old price principle had remained in force: extreme price divergences would definitely have resulted in even greater supply disturbances in intra-CMEA trade, even though most of the medium-term delivery contracts are formulated in physical volumes.

V.2. Does the USSR Subsidize the CMEA Six?

Even though the increase by a factor of five so far of its energy and fuel export prices in rubles makes the USSR the evident winner of this process of adaptation, and the CMEA Six the no less evident loser, scholarly controversy has over the last few years focused predominantly on the issue of the income foregone by the USSR by not asking WMPs immediately for its exports, on the one hand, and on the impact of the structurally distorted price patterns of its trade with the CMEA Six, on the other. The foregone-income concept underlies the analytical concept of opportunity costs resorted to in several earlier studies, the "opportunity" being defined by WMPs: it was Marrese and Vanous who, in a recently published book (1983), have advanced this concept in a formally consistent way to a point where the misgivings concerning its application become quite conspicuous and clear-cut.

In the case under consideration, the use of the opportunity-cost concept is less than satisfactory, for two reasons.

Firstly, it disregards by hypothesis the very real adaptation-induced income transfers represented by a sizeable t.o.t. gains of the USSR vis-a-vis the CMEA Six. Foregone gains resulting from an opportunity-cost calculation present only the difference between the trade gains that might have been (as derived from the WMPs) and the trade gains that have in fact accrued; they fail to encompass the income transfers due to the said t.o.t. changes. By disregarding the real gains of the USSR and the real burdens on the CMEA Six, the opportunity cost approach fails as a satisfactory basis for a political-economic analysis of the USSR's relations with the CMEA Six because, clearly, the real processes of redistribution that have taken place in recent years in the CMEA region are not without their political dimension sui generis.[47]

Secondly—and this objection arises primarily in regard of Marrese's and Vanous' book—foregone gains are by no means tantamount to subsidies, although they may, in some cases, in fact, imply that subsidies are being paid. In order to be classed as subsidies, foregone gains must measure up to the following conditions: they must be backed by a recognizable political intent; the mechanism which creates the foregone gains must ensure a systematic advantage for the CMEA Six at all times, or it must have been changed so as to increase the said systematic advantage or, indeed, to create it in the first place.

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[47] For more details see Scheme 1, Chapter II in Forschungsbericht, No. 97, the Vienna Institute. Marrese and Vanous had addressed in their study only the price and income effects figuring in the third quadrant of the scheme.

The magnitude of foregone gains in trade with the individual countries of the CMEA Six due to structural price differentials should in all likelihood be attributed to the differences in the commodity composition of exports vs. imports, rather than to the different strategic importance in the eyes of the USSR of this or that CMEA Six country. The assumption that the USSR regulates its subsidies through the commodity structure of its trade appears somewhat far-fetched;[48] because a closer scrutiny permits to interpret the said commodity structures essentially in terms of the different resource endowments and levels of economic sophistication of the individual countries.[49]

The commodity pattern of the USSR's trade with the CMEA Six would be a very unwieldy instrument for regulating subsidies, among other things because the commodity patterns of mutual trade prove on scrutiny to be rather stable, and it is the prices, hooked up to the WMPs that exhibit mighty and unforeseen fluctuations.

One concludes that a direct political intent on the part of the USSR is unlikely to be at the root of the structural price differences. A systematic subsidy granted to the CMEA Six would emerge on this basis only on the assumption that the WMPs are "fair prices," which they are not, particularly in an intra-CMEA context (cf. Chapter II and Section IV.1).

Foregone gains due to a *lagged adaptation* to WMPs cannot be classed as subsidies, either. Even though the current form of the price formula is evidently the result of a political process, it has resulted in a clear-cut disadvantage for the CMEA Six, as compared with the pre-1975 formula. Nor can a systematic benefit be derived from the time lag introduced, since, as more recent developments have shown, relative prices do not, by any means, change invariably in favor of raw materials.

In a somewhat restated form, the aim pursued in Marrese's and Vanous' book was to estimate what it costs the USSR to maintain the bloc. It is the present author's contention that their quantitative results considerably overstate the impact of the really existing price differentials upon the countries' incomes (cf. Section IV.4). Their theoretical approach has led them to putting the cart before the horse: it is not the price differentials (between the CPS and the WMPS) that generate the expenditure on the maintenance of the bloc; rather, it is the socio-economic setting of the bloc that generates price differentials, the implied foregone gains of which are to be ascribed to the distribution of comparative cost advantages within the bloc.

V.3. Does the USSR Have a Real Cause for Complaint?

Even though the price evolution in intra-CMEA trade would have been a sufficient cause for the USSR to complain ever since the early 1960s and even more so since the 1970s, Soviet authors had never, in fact, complained about the unfavorable prices (unfavorable, that is, in comparison with the WMPs) or pretended that the USSR had granted benefits (subsidies) to its partners in the CMEA. The first public hint came in 1979; in 1981, an exceptional mention of this argument is found in the letter of the Communist Party of the Soviet Union to the Polish United Workers Party.[50] The date at which Soviet complaints first surface is significant. Let us recall: it was in the late 1970s when most of its difficulties hit Soviet petroleum production, against a background of an actually declining coal production. By 1980, the CMEA Six's share of Soviet energy exports had exceeded 50%. In order to maintain its room for maneuver in its trade with the West, the USSR simply had to avert the CMEA Six's increasing demand for fuels and energy (which, incidentally, had been stimulated by the USSR in and after the mid-1960s). In such a situation, in view of a Soviet income shortfall that was comparatively easy to quantify, playing the price trump card was by far the most obvious move.

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[48] Marrese and Vanous, pp. 68–86 and pp. 145–152.

[49] This would apply more or less even to the USSR's foreign trade with Rumania.

While the USSR is intent, on the one hand, on maintaining and, indeed, expanding its exports to the West, it seems, on the other, to be rather unhappy also with the commodity offer range of the CMEA Six. The said offer range corresponds less and less to the strategic-economic needs of the USSR[51] which have themselves undergone substantial changes since the mid-1970s, changes characterized by increasing number of increasingly stringent economic bottlenecks, by the shift to the East and North of the available deposits of fuels and raw materials and by grave and persistent inadequacies in the agrarian sector. The structural problems linked with these changes have forced the USSR into a closer cooperation with the West, which is in a position both to supply crucial technology and to cover the USSR's shortfall in agrarian produce. The incremental finance for this cooperation was generated by the two energy price explosions, which between 1970 and 1982 boosted the USSR's imports from the hard-currency sphere by a factor of 3.3 in volume terms.

The CMEA Six could, of course, not keep up with this upswing (the USSR's imports form the CMEA region expanded by a factor of only 2.2 over the interval). Moreover, while the USSR could obtain credits in the West to cover part of its immensely expanded demand for imports, it had, even after raising its prices towards the CMEA Six, to finance itself its surplus in its trade with those, by granting them credits which, as it is well known, fetch interest at two to three percent only. Furthermore, the CMEA Six could not respond to the import pull generated by the USSR's t.o.t. improvement by offering goods corresponding to the structural needs of the USSR. The USSR's attempts to nudge the CMEA Six towards producing what it actually needed, by instruments, such as the "agreed plan for multilateral integration measures" or the "long-term special target-oriented programs of cooperation," do not seem to have been very successful.[52]

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[50] M. Lavigne (1983), p. 137.

[51] Pécsi (1983), pp. 6–16.

[52] M. Lavigne (1983) does not agree: in her view, these measures have resulted in a stronger attachment of the CMEA Six to the USSR; she believes to discern here a certain political compensation of the USSR for the income losses suffered. A stronger attachment of the CMEA Six to USSR's t.o.t. gains, which the CMEA Six cannot, and do not intend for obvious reasons, to counter by a reduction of imports.

Let us sum up. To the USSR, the shifts in its strategic needs make the West as a supplier appear in an increasingly attractive light: but as the USSR's trade with the West expands, so does the world market loom even larger as the forum relevant to the opportunity levels of its foreign trade, as a whole, the more so since world market yardsticks favor the USSR. The CMEA Six are faced with a very different situation. The WMPs have evolved to their detriment. They have to shoulder the full burden of this deterioration, albeit with a time lag. The structural price differentials (which predated the big price upsets in the world markets even though they were enhanced by the process of adjustment, and which are in all likelihood here to stay) are an expression of the fact that the CMEA Six are operating in a relatively strongly protected space, and that the mechanism of "protection" forced upon them by the USSR are at the same time also at the root of their overall inefficiency. This is why the CMEA Six deplore, if not the prices proper, then at least the price mechanism, which is the root cause of substantial dysfunctions. Instead of looking at the structural price differentials as the manifestations of intra-regional exploitation relations or politically motivated subsidies, one should rather view them as a measure of the relative backwardness of the region, backwardness that each and every CMEA country has to overcome, if it wants to render its participation in the international division of labor at all efficient.

APPENDIX A[1]

[Sources by item and year]

	CMEA	Hungary	CMEA Six
Total trade	X	X	X
Commodity groups	—	X	—
1971	VJV		
1972	VJV		
1973	VJV		VJV
1974	VJV		VJV
1975	VJV	VD	VD
1976	VJ	VD	VD
1977	VJ	KD	KVD
1978	VJ	KD	KVD
1979	VJ	KD	KVD1
1980	VJ	KD	KVD1
1981	VJ	KD	KVD
1982	V	KD	KVD

[1] Sources for calculating annual changes in Soviet export, import and terms of trade unit value indices vis-a-vis all the other CMEA countries, the CMEA Six and Hungary.

Note.—Though figures from VTSSJ are to be preferred to those from VTSS in general, inconsistencies can be observed. They can be derived i.a. from the fact that: (a) geometric averages of the annual volume changes in 1976, 1977, . . ., 1980 do not equal the averages 1980 over 1975; and (b) the weighted average of socialist and non-socialist countries' volume and derived price indices does not equal the corresponding total, the deviation, however is not dramatic.

Sources for:

V derived from official volume indices; Source: VTSS.

VJ derived from official volume indices, Source: VTSSJ (jubliee edition, 1922–81, Moscow 1982).

VJV interpolation of average volume changes based on VTSSJ by annual volume changes based on VTSS (for 1975 from revised figures of Vneshnyaya torgovlya, monthly journal 1977/9).

VD unit value indices calculated by Dietz (1979); Source: VTSS; for detailed informations on method see Dietz (1979).

KVD author's unit value indices; Source: KSE for unit value indices; VTSS for commodity composition of Soviet trade with CMEA-6.

KD author's unit value indices; Source: KSE for unit value indices by commodity groups; VTSS for commodity composition in Soviet trade with Hungary.

KVD1 import price changes in 1979 and 1980: average of both years.

Method

The calculations were carried through in several steps.
Example: Soviet exports (=Hungarian imports, Source: KSE!)

$$(1)\quad u_{ijt} = \frac{v_{ijt}}{q_{ijt}} \cdot c_t$$

Unit value of position in in commodity group j in TR per ton, kg, etc, where v denotes value in Forint, q denotes quantity, and c_t denotes the Forint/Ruble-exchange rate in year $_t$.

$$(2)\quad p_{jt} = \frac{\sum_i u_{ij1}\, q_{ij1}}{\sum_i u_{ijo}\, q_{ij1}}$$

Unit value (Paasche) annual index for exports in commodity group j over the preceding year where 1 denotes the reporting year t, and 0 the preceding year t-1.

$$(3)\quad p_t = \frac{1}{\sum_{j=1} a_{jo}} \cdot \sum_{j=1}^{9} p_{j1}\, a_{jo}$$

Unit value index for total Soviet exports to Hungary in year t over the preceding year 0, where a_{jo} represents the summed-up export values across all positions of commodity group j (including positions without quantity data) in each preceding year (a^{jo} was calculated from VTSS).

$$(4)\quad ip_{t,\ t-k} = p_{t-k+1} \cdot p_{t-k+2} \cdot \cdots \cdot p_t$$

We received unit value indices for year t over year t-k by chaining the annual unit value indices for total trade, for each commodity group, and for the corresponding terms of trade indices.

NOTE 1.—Unit value index calculations have sample characteristics in two respects:

(a) with respect to individual commodity groups, since quantity data are not available for each position. The sample size (relation of summed-up values with quantity data to total value in that group) ranges widely. It is (almost) 100% for raw materials and decreases with the degree of manufacture. But the number of positions increases with that degree, thus improving the statistical significance of the indices.

[For year 1982]

ETN	1	2a	2b	3	4	5	7	8	9	Total
Hungarian exports to U.S.S.R.:										
Sample size, percent	30	100	57	85	58	62	98	63	56	....
Number of unit value positions	45	4	4	12	3	4	3	43	59	177
Hungarian imports from U.S.S.R.:										
Sample size, percent	35	100	100	99	85	100	....	75	78	....
Number of unit value positions	64	12	28	35	9	23	....	12	39	222

(b) with respect to total foreign trade, since VTSS does not cover all of foreign trade. The share of the group of not identifiable commodities differs for exports and imports, and varies from year to year over a range of 10-16%. Thus unit values in the nine ETN-groups had to be taken als representatives for total trade (for ETN-groups see notes to table 3).

Note 2.—unit value indices can be distorted by quality and structural changes within the unit value positions. To exclude this effect as far as possible, the indices were calculated (a) at an annual base, then chaining them, and (b) unit value positions in manufactures which do not meet the condition (5) were omitted, since it can be expected that changes beyond that limit are due to structural and quality changes within the unit value position.

$$0.8 < \frac{u_t}{u_{t-1}} < 1.3$$

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EDITOR'S NOTE

In his paper, Raimund Dietz (1985) presents a new methodology for estimating Soviet "foregone gains" in trade with Eastern Europe. Dietz' contribution is of particular interest because it presents estimates that are significantly lower than the "implicit trade subsidy" calculations of Marrese and Vanous in their book *Soviet Subsidization of Trade with Eastern Europe: A Soviet Perspective.* In particular, Dietz estimates that the cumulative Soviet foregone gains in trade with Eastern Europe due to the lag between changes in world market prices and movements in intra-CMEA foreign trade prices amounted to about 9.9 billion transferable rubles (TRs) in the 1972–78 period. This contrasts sharply with the Marrese-Vanous estimates for cumulative Soviet implicit subsidies to its East European CMEA trade partners in the same period of 29.2 billion TRs.

In discussions in *Comparative Economic Studies,* forthcoming 1985–86, Thomas Wolf expresses some reservation on Dietz's use of weights, exchange rates, and selectivity of trade, especially nonenergy trade. Raimund Dietz is to respond in the same forum. Joseph Brada in "Soviet Subsidization of Eastern Europe: Primacy of Economics over Politics?" in *Journal of Comparative Economics,* vol. 9, No. 1, March 1985, questions the level and distribution of Soviet subsidies, which Marrese and Vanous partially attributed to political considerations.

ECONOMIC RELATIONS BETWEEN EUROPEAN AND THE LESS-DEVELOPED CMEA COUNTRIES *

By Horst Brezinski **

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I. INTRODUCTION

Analyzing the relations between the European CMEA countries and the less-developed CMEA countries—Mongolia, Cuba, Vietnam—one has to start from the main goals of the CMEA as proclaimed in the charter of this international organization. Article I concerning principles and purposes of the organization cites the raising of the level of industrialization in this industrially less-developed group. Moreover, the long-term goal is the equalization of development levels in all participating countries.

Taking into consideration these claims one has to ask if there is a basic conceptual agreement among the European CMEA countries as to how to increase the level of development in the less-developed group. This will require a closer analysis of the institutional ties and of the economic relations between the two groups.

This study will focus only on the economic aspects and will neglect important political, military and cultural aspects. It will be hypothesized that current economic and institutional relations between these two blocs are an obstacle to the industrialization of the less-developed group. Moreover, these economic relations lead to sectoral distortion in the less-developed group.

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II. CMEA CONCEPTION AND POLICY TOWARD THE LESS-DEVELOPED NON-EUROPEAN MEMBERS

The CMEA view of the less developed members has been dominated by the Soviet Union since the founding of the CMEA. This is due to the economic, military and political power of the USSR. Tables 1 and 2 show the ever increasing importance of the Soviet Union in the foreign trade of Mongolia, Cuba and Vietnam during the last decade. This is underlined by a look at the net development aid to Cuba and Vietnam between 1970–1979. These two countries received $15.327 million from the CMEA countries during this period, out of which 88.6% was paid by the Soviet Union and 11.4% by the other Eastern European CMEA members.[1] The Soviet Union has continued to be the main donor of development aid to these countries in the eighties. The present Soviet economic aid amounts to $3–4 billion annually.[2] This is likely to decline because of the poor economic performance in the Soviet Union and Eastern Europe. Up to the end of the sixties the Soviet-dominated CMEA development strategy for the less-developed countries was based on the transfer of the Soviet model. Up to that time Soviet aid financed mainly the development of heavy industry, but the failures of development aid (e.g. in Cuba) led to a reconsideration of that development strategy.[3] The CMEA gave up the dogma of the priority of heavy industry.[4] It was acknowledged that each of these less developed countries had specific economic problems.[5] In particular, there are differences in the endowment of natural resources and climatical conditions, differences in the level of economic development and employment conditions and differences in the degree of progress toward the construction of socialism.[6]

Given these considerations, there is no longer a clear and unified development strategy. The Eastern European countries seem to be flexible in supporting different development strategies, but this holds true only at first examination. Although there is a new recognition for the need to increase the 'socialist international division of labour' along the lines of comparative advantage, these adjustments are to take place in the less-developed group. The specialization, therefore, is a one-sided specialization in which the less-developed countries tailor their economies to the preexisting socialist economies.

For example, since the European CMEA members have a strong demand for tropical and subtropical products such as coffee, tea, cocoa, citrus fruits, rubber, etc., the less-developed countries in these climatical zone have been assigned the task of supplying these goods.[7] Moreover, the East European countries face difficulties in getting the needed fuel and raw material deliveries from the Soviet Union.[8] Even for the Soviet Union it becomes more expensive to exploit new raw material resources, since the new deposits are in Siberia. Consequently, countries such as Mongolia and Cuba are becoming more important in supplying the Eastern European countries with the needed raw materials. On the other hand, these countries are required to assure markets for the Soviet and Eastern European industrial products which are generally not competitive on the international market.[9] Therefore, the CMEA's policy reflects strongly the self-interest of the European members.

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[1] P. Wiles and A. Smith, "The General View, especially from Moscow" in *The New Communist Third World*, P. Wiles (ed.), London, 1982, p. 42. H. Machowski and S. Schultz,—RGW-Staaten, und Dritte Welt-Wirtschaftsbeziehungen and Entwicklungshilfe, Bonn, 1981, p. 40.

[2] M. I. Goldman, *USSR in Crisis: The Failure of the Economic System*, New York-London, 1983, p. 126.

[3] E. Kridl Valkenier, Soviet Economic Relations with the Third World in *The Soviet Union and the Developing Countries*, R. Kanet (ed.), Baltimore, 1974, p. 218.

[4] E. Böhm and S. Reymann, Das Wirtschaftliche Engagement der Sowjetunion in Asien, Hamburg, 1983. p. 13 f.

[5] E. Kridl Valkenier, "The USSR, the Third World and the Global Economy," Problems of Communism, v. 28, no. 4, 1979, p. 20.

[6] P. M. Alampiev, "Sotsializm preobrazuet strukturu proizvodstva-opyt Mongolii, Kuby, Vietnama, Bolgarii," Moskau, 1982, p. 169.

TABLE 1.—SHARE OF THE CMEA IN THE EXPORT AND IMPORT TRADE OF MONGOLIA, CUBA AND VIETNAM, 1970–82

	1970	1975	1976	1978	1979	1980	1982
Export:							
Mongolia	95.9	98.6	98.4	96.2	95.2	94.1	96.6
Cuba	64.8	63.1	73.5	80.2	78.4	67.1	78.1
Vietnam	70.4	47.9	43.8	61.2	67.0	69.5	....
Import:							
Mongolia	98.2	98.0	90.0	98.8	98.5	98.4	97.1
Cuba	59.8	48.0	59.0	71.9	75.8	75.3	84.5
Vietnam	97.1	53.5	49.9	63.8	76.4	69.4	....

Sources: Le Courrier des Pays de l'Est No. 263, June 1982, p.5, Statistichesky Ezhegodnik Stran-chlenov Soveta Ekonomicheskoi Vzaimopomoshchi 1983, p. 313 ff., own calculations.

TABLE 2.—SHARE OF THE SOVIET UNION IN THE FOREIGN TRADE OF MONGOLIA, CUBA AND VIETNAM 1970, 1980, AND 1982

	Exports			Imports		
	1970	1980	1982	1970	1980	1982
Mongolia	69.9	76.8	....	84.3	92.3	....
Cuba	49.3	54.4	70.4	49.2	58.2	54.4
Vietnam	39.9	50.5	51.1	63.0	46.0	81.8

Sources: "Le Courrier des Pays de l'Est," No. 263, June 1982, p. 7 and No. 262, May 1981, p. 61; own calculations.

The new policy is implemented through the institutional framework of the CMEA and the joint planning activities established primarily in the seventies.[10] In addition to the traditional bilateral and multilateral coordination of plans, three new forms of planning activities have been enacted since 1974. These are important for the implementation of the new development strategies for Mongolia, Cuba and Vietnam.

(1) Long-term target programs which are an attempt to integrate the perspective plans of the members on a sectoral basis. These programs are designed for five sectors (1. Energy, Fuels

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[7] Ibid., p. 169.

[8] O. Bogomolov, "The CMEA Countries and the New International Economic Order," in "East-West-South", C.T. Saunders (ed.), London, 1981, p. 253.

[9] R. E. Kanet, "Soviet Policy Toward the Developing World: The Role of Economic Assistance and Trade," in "The Soviet Union in the Third World: Successes and Failures," R. H. Donaldson (ed.), London, 1981, p. 338.

[10] H. D. Brezinski, "Internationale Wirtschaftplanung im R.G.W." Paderborn—Wien-Zürich-München, 1978, p. 45ff.

and Raw materials, 2. Agriculture and Food Industry, 3. Mechanical Engineering, 4. Industrial Consumer goods and 5. Transport).

Sectors 1, 2 and 5 are of special importance for the less developed members. These long-term target programs consist of 340 measures, out of which there are 232 multilateral and 128 bilateral agreements. These agreements refer to joint investments, specialization and cooperation of production, cooperation in science and technology and others.

(2) The "Agreed Plan of Multilateral Integration Measures" which includes all the measures of the long-term target programs in addition to other provisions. The plan consists of four parts: [11]

a. joint construction of investments, mainly in the field of energy and raw materials;

b. specialization and cooperation of production;

c. specific joint investment proposals and measures to raise the standard of living and the level of development of Mongolia, Cuba and Vietnam;

d. standardization of products and technology.

(3) Inclusion of special sections of socialist economic integration in the members' annual, five-year and perspective plans to ensure the national allocation of resources for CMEA agreements and projects.[12]

Apart from these planning instruments, some new financial instruments have been created that are designed to assist the less-developed countries. These include the granting of credits by the CMEA banks at interest rates of 0.5%—2% compared to normal rates ranging between 4% and 6%, and the granting of preferential prices for exports to these countries and imports from these countries. According to Western estimates in 1982, these special pricing arrangements amounted to a subsidy of $424 million to Cuba, $40 million to Vietnam, and $10 million to Mongolia.

III. MONGOLIA

1. Institutional and Economic Ties with the CMEA

Among the group of the less-developed countries in the CMEA, Mongolia was up to the end of the forties still a country which was characterized by nomadic cattle-breeding and a barter economy.[13] Since Mongolia, with the aid of Russian troops, gained its independence from China in 1921, it had only diplomatic and economic relations with the Soviet Union. Starting in 1948 it enlarged its political and economic contacts. China and the Soviet Union became important in assisting Mongolia to achieve a higher level of economic development.

Up to 1962, when Mongolia entered the CMEA, the Soviet Union and China were the most important sources of aid and credits.

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[11] V. Jechminek, M. Petrash, G. Takach, "Kollektivnymi usiliyami", in Ekonomicheskoe Sotrudnichestvo Stran-Clenov SEV, No. 1. Moskau, 1982, p. 16.

[12] E.J. Feuchtwanger, P.V. Mailor (eds.) "The Soviet Union and the Third World." London, 1981, p.86.

[13] Z. Dawadorsh, "Welche Vorteile bringt der Mongolei die Mitarbeit in RGW?" in *Probleme des Friedens und des Sozialismus*, No. 19, Berlin, 1976. p. 1401.

Since Mongolia was so backward, it was impossible to transfer the Stalinist development strategy. The first stage of socialist industrialization in Mongolia was characterized by a concentration on the establishment of infrastructure, light industry and especially the food industry.[14] The Soviets had already recognized the opportunities to exploit raw materials, and some of the investment aid concentrated on mining wolframite, zinc and fluorite.[15] The Soviet Union not only gave credits, but established joint enterprises. Starting in 1949 such enterprises as 'Mongolneft' and 'Sowmongolmetal' operated in the field of oil and metal.

The Sino-Soviet rift in 1961 ended this period of joint assistance. Mongolia, which has a borderline of 4.682 km with Mainland China, acquired a new role in the strategic concept of the Soviet Union. Mongolia then had the opportunity to join the Soviet Union and the CMEA or to follow China. The dominance of the Soviet Union in the Mongolian foreign trade relations—70% of the foreign trade turnover was with the Soviet Union and about the same percentage of aid and credits came from that country—but also the existing political and military ties forced Mongolia to join the CMEA. The Soviet Union started to integrate Mongolia into the CMEA and into its own federation as a so-called 16th republic. By 1961 Mongolia had started to synchronize its Five-Year Plans with the Soviet Union.

When Mongolia became a member of the CMEA in 1962 cooperation with the CMEA members and the CMEA institutions was intensified. Mongolia participated in the work of those Standing Commissions which were relevant to its national economic interests. The bureau of the Standing Commission for Geology was placed in Ulaanbataar in order to underline the importance to this commission for the national economy of Mongolia. Mongolia also became a member of several interstate economic organizations and international economic organizations of the CMEA countries.[16] The Soviet Union and the CMEA influenced the Mongolian economic development strategy by establishing three main goals:

Processing of livestock products to satisfy the national demand and to provide for exports to the Soviet Union;

Increase of energy production to enable industrial production to a larger extent; and

Exploitation of mineral resources to satisfy the need of the CMEA countries.

The CMEA countries made up for the lost Chinese aid, however. There was a division of labor among them concerning developmental assistance. The USSR concentrated mainly on big projects in the branches of electric energy, fuel and non-ferrous metallurgy. The smaller CMEA countries concentrated on projects in the sector of industrial consumer goods and food processing. Mongolia received long-term credits from the CMEA countries at low interest rates (2–3%) with repayment in the form of products from the newly-constructed enterprises.[17] In the five-year period 1961-1965, 47.1% of total investment in the Mongolian economy was based on such credits; the corresponding figures for 1966-1970 and 1971 to 1975 were 50.3% and 49.8%.[18] These credits and assistance were mainly financed by the Soviet Union. Since the Soviet foreign trade statistics for Mongolia do not distinguish between commercial deliveries and aid, the surplus of the Soviet Union in foreign trade with Mongolia can give a direct hint on the magnitude of the Soviet aid. For 1961-1965 the surplus amounted to 267 million rubles, which corresponds to two-thirds of the foreign aid for the Mongolian economy during that period. Table 3 provides the data for the period from 1966, showing that the Soviet surplus is ever growing. This surplus amounted to about 50% of the total investments of the Mongolian economy during 1966-1970 and 1971-1975. The share of the surplus in total investments has increased since 1976 to 60% to 70% at present. Given an accumulation rate of higher than 35% annually since the beginning of the 1970s—peaking at even 50% in 1978 and at 40.2% in 1982—the share of foreign credits and aid in Mongolian national income should run to about 25%. The calculations of Smith and Schnytzer (35% for 1978) seem to be too high since they improperly equate accumulation and capital investments.

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[14] G.S. Matveeva, "Sozdanie material' no-teknicheskoi bazy sotsializma v MNR," Moskau, 1978, p. 122.

[15] S. Kojlo, "Polska Mongolia Gospodarka Wspolpraca," Warschau, 1972, p. 122.

[16] Brezinski, H.D., op. cit., p. 201 ff.

In spite of the relatively high foreign capital inflows in the sixties, Mongolian economic performance up to 1970 did not improve tremendously. A look at the data in table 5 confirms the poor performance of the economy. National income per capita stagnated, gross agricultural production grew only at a small rate, the exports and imports increased only at a small rate, and exports and imports increased only sluggishly. Labor productivity did not grow faster than in the Soviet Union, therefore the goal of improving the Mongolian economy relative to the Soviet Union was not achieved.

By adopting the "Comprehensive Program of the CMEA" in 1971 Mongolia explicitly declared itself to be a developing country that should receive special aid from the other CMEA members. Special measures were envisaged including the delegation of foreign labor to Mongolia. In particular, the building industry benefitted from foreign labor; in addition to that, Mongolia received credits at favorable terms (0.5-1%) that meant a savings of 15 million transferable rubles at the International Bank for Economic Cooperation. Higher foreign trade prices for agricultural products, raw materials and goods from manufacturing industry were granted. Finally, assistance for the improvement of scientific-technical progress was given.

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[17] A. Smith, A. Schnytzer, "The Mongolian People's Republic" in "The New Communist Third World," P. Wiles (ed.), London, 1982 p. 336.

[18] Ibid., p. 336.

TABLE 3.—MONGOLIAN FOREIGN TRADE DATA 1966–82

[Million transferable rubles, current prices]

	1966–70	1971–75	1976–79	1980	1981	1982
A. Soviet data:						
Soviet exports	839	1,265	2,214	676	787	919
Soviet imports	260	481	590	207	249	314
Soviet surplus	579	784	1,624	469	538	606
B. Mongolian data:						
Imports from CMEA	500	743	1,084	355	459	514
Exports to CMEA	NA	NA	731	260	304	364
Deficits	NA	NA	352	95	155	150

Sources: A. Smith, A. Schnytzer, "The Mongolian People's Republic", in "The New Communist Third World," P. Wiles ed., London, 1982, p. 337.

TABLE 4.—COMMODITY COMPOSITION OF FOREIGN TRADE OF MONGOLIA 1960–82

Groups of commodities	1960	1965	1970	1975	1980	1981	1982
Exports:							
I			0.2	0.3	0.3	0.2	0.1
II	.1	0.6	5.4	6.5	26.4	34.4	39.1
III	96.6	96.7	87.6	83.7	63.3	54.1	48.0
IV	.3	2.6	5.9	9.1	9.6	10.8	12.3
V		.1	.9	.4	.4	.5	.5
Imports:							
I	30.0	23.7	25.9	35.8	33.1	34.9	35.4
II	10.3	10.1	12.8	10.3	24.1	24.4	28.7
III	13.1	20.7	15.0	11.8	13.7	14.5	11.1
IV	25.6	36.2	36.3	33.4	20.9	19.5	17.7
V	21.0	9.3	10.0	8.7	8.2	6.7	7.1

I = Machinery and Equipment.
II = Fuels, mineral raw materials, metals.
III = Raw materials and processed products (nonfood), raw materials for foodstuffs production and foodstuffs.
IV = Industrial consumer goods.
V = Chemicals, fertilizers, rubber, construction materials and other.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

TABLE 5.—SEVERAL INDICATORS OF ECONOMIC DEVELOPMENT OF MONGOLIA 1960–82

[1970 = 100]

	1960	1965	1970	1975	1980	1981	1982
National income produced	77	81	100	138	181	196	213
National income produced per capita	101	93	100	120	136	143	152
Gross industrial production	39	62	100	155	232	256	282
Gross agricultural production	88	98	100	123	108	121	134
Total volume of capital investment in the national economy	55	77	100	177	292	386	375
Volume of capital investment of industry	[1] 52	92	100	121	384	587	498
Volume of capital investment in agriculture and forestry	52	38	100	130	141	148	161
Export [2]	86	96	100	208	356	414	496
Import [2]	80	82	100	177	338	434	488
Labour productivity in industry	60	71	100	137	163	172	178
Labour productivity in construction industry	56	NA	100	146	178	188	190

[1] Including construction.
[2] At current prices in relevant years.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

The Complex Program also envisaged joint enterprises. The Soviet Union established two new joint ventures in 1973: 1. Erdenet, a plant for the development and processing of copper and molybdenum and the joint association "Mongolsovtsvet-metal" which prospects for and processes gold and non-ferrous metals. In 1979, two further joint enterprises were set up: "Mongolbulgarmetal" between Mongolia and Bulgaria and "Mongolczechoslovak metal between Mongolia and Czechoslovakia. Both are still under construction. By contrast, Erdenet is working at full capacity since 1983, and is producing and processing 16 million tons of ore. The investments in that case covered not only the plant, but also the construction of the complete town, infrastructure and smaller factories. The town now has more than 40,000 inhabitants, among them more than 13,000 Soviets. 63% of the working-force of the plant comes from the Soviet Union.[19] The Soviet Union gets 50% of the production and the Mongolian capital share in the joint enterprise is paid back out of their 50% of the production.

In addition the "International Geological Expedition in the Mongolian People's Republic (MPR)" was founded in 1975. Members of this organization are Bulgaria, Hungary, the GDR, Cuba, the MPR, Poland, the USSR, and the CSSR. The primary aim of the organization is to prospect for minerals. About 500 persons are employed. The costs of running the organization (32 million transferable rubles for 1975–1985), are paid by the partners of Mongolia at equal shares.[20] These activities of the CMEA countries clearly indicate their strategy. Mongolia is considered a country which has enormous resources of copper, zinc, wolframite, fluorite, phosphate, brown coal etc. These minerals rate Mongolia among the top ten in the world. These opportunities explain why the Soviet Union and the other East European CMEA countries are so interested in Mongolia apart from political and military considerations.

In the beginning of the eighties, the total annual amount of credits and aid can be estimated at $1–1.2 billion. Considering the current economic problems, a return can only be expected in the long run.

It is not astonishing therefore that the new planning instruments mentioned in part II refer to Mongolia. The long-term target programs envisage the participation of Mongolia especially in energy, fuels and raw materials, agriculture and food, and transport sectors. Mongolia participates in 54 agreements (out of 340) 7 joint investments (121 for all CMEA countries) are to take place in Mongolia (2 in the fields of energy, fuels, 1 in chemistry, 3 in transport and 1 in the consumer goods industry). To date 4 projects have been signed.[21] These projects concern the cultivation of new land, the enlargement of the railway-system, the construction of an open-pit coal mine and a thermal power plant.[22] The "Agreed Plan of Multilateral Integration Measures" for the period 1981–1985 contains in respect to Mongolia the following measures:

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[19] R. Doh, "Die Dritte Welt im RGW: Probleme der Mongolischen Wirtschaft," Osteuropawirtschaft, vol. 27, No. 3. 1982, p. 242.

[20] A. Gurragcha, L. Tserenzshav, "Resultaty i perpectivy deyat'el nosti mezhdunadrodnoi geologicheskoi ekspeditsii v MNR," Ekonomicheskoi Strudnichestuo Stran-chlenov SEV," No. 3, Moskau 1982, p. 46.

[21] N. Shinkov, A. Vogankova "Zel': uskorenie razvitia i povyshenie effektivnosti narodnogo khozyaistva MNR, Respubliki Kuba i SRV, "Ekonomicheskoe Sotrudnichestvo Stran-chlenov SEV," No. 6 Moskau 1983, p. 31

[22] V. Tsedenbal, "Zavershenie stroitel'stva Sotsializma v MNR i rasshirenie yeyo uchastia v mezhdunarodnom sotsialisticheskom razdelenii truda," Ekonomicheskoe Sotrudnichestvo Stran-chlenov, Moskau, 1983, p. 6.

Financing and working of the "International Geological Expedition" in Mongolia.

Cooperation in cultivating new land. Cuba and the USSR are involved in this project which amounts to 14.6 million transferable rubles.

Since there are only two projects mentioned in the "Agreed Plan of Multilateral Integration Measures" this shows that the integration of Mongolia is mainly based on bilateral ties. The Soviet Union will engage in 342 projects, among which roughly one quarter relates to industrial projects. To ensure the necessary cooperation and consideration by the Mongolian planning and administration authorities two methods have been adopted. The first is the inclusion of a special section of socialist economic integration in the different national economic plans. This is done in detail in the Mongolian national plan.[23] The second method consists of the close cooperation of the planning authorities with the Soviet Union. At the moment there are direct contacts between 13 Mongolian ministries and 20 Soviet ministries, as well as between 40 Mongolian and 80 Soviet research institutes. In addition, a general schedule for the development of Mongolia under the category of special consideration of the Soviet border territories has been set up for the period to 1990. These developments that closely integrate Mongolia into the Soviet economy, indicate why it is no exaggeration to call Mongolia "the 16th Soviet republic." What have been the impacts on the Mongolia economy?

2. Impacts on Economic Development

Analyzing the economic development of Mongolia since 1960 using the data in table 5, one can recongnize some trends. The produced national income up to 1970 did not rise very fast. The rate of growth was the lowest of all the CMEA countries. Since 1970, national income rose faster than in most other partner countries. During the last two years, Mongolia has had the highest growth rate. Nevertheless, national income per capita grew very slowly, especially in comparison to the European CMEA countries. Looking at the gross values of production, one has to conclude that the growth was mostly attributable to the rise in industrial production, whereas agricultural production was subject to strong fluctuations. This was not mainly due to insufficient investment, as table 6 points out, but was caused by unfavorable climatic conditions. Grain production, which has a share of 20–25% agriculture, declined from 1975–1980 by 20% and cattle-breeding declined during this period by 8%.

The increase in industrial production was caused by a large increase in capital investment which stopped in 1982. In spite of the large investments, labour productivity did not rise much faster than in most of the European CMEA countries; it even lagged clearly behind productivity increases in Bulgaria and Romania.

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[23] A. D. Leznik, "Upravlenie mezhdunarodnoi spetsializatsiei proizvodstva stran SEV," Moskau, 1982, p. 100.

This was due to the still insufficient mechanization of labor,[24] and the insufficient expertise in handling modern equipment.[25]

Nevertheless, the investment policy which concentrated on industry (electric energy, fuel, food-processing and non-ferrous metallurgy) and agriculture (investments in grain and fodder production) led to a substantial change in the structure of the national income produced, as table 7 points out. The share of industry has risen to 30%, whereas the share of agriculture has declined and will grow slowly in the near future. But the sector of trade, material and technical supplies, services and procurements has been relatively constant and twice the share of developed CMEA countries. Considering the development of foreign trade the growth of exports has not been higher than that of imports, leading to an absolute increase in deficits. Regional development has become even more one-sided than in 1970 when almost all foreign trade was conducted with the CMEA. Since then the importance of the Soviet Union has increased from an already high level, as the data in table 2 show. Consequently, Mongolia has become even more dependent on the Soviet Union, a fact which is underlined by the increasing institutional ties. The commodity structure of foreign trade shows a substantial shift from raw materials for foodstuffs and foodstuffs to fuels and minerals as well as to industrial consumer goods. On the import side the high share of machinery and equipment has remained stable, whereas the importance of fuels has grown due to the process of industrialization and the increase in prices. Imports of industrial consumer goods have declined as have imports of construction materials and fertilizers.

This complete change is due to the Soviet policy of assistance. The investment projects of the Soviet Union concentrated on the non-ferrous industry, fodder production, production of electric energy, construction material and wood. Today 100% of construction material and wood, 90% of the national production of copper and molybdenum, 70% of electric energy are achieved by plants set up with Soviet help.

The process of industrialization has been accompanied by unbalanced regional development. The industrialization mainly took place along the north-south-line of the Transmongolian railway which originally was built by the Soviets to connect the Soviet Union with China. Up to the 1960s nearly 75% of the capital investments were done in Ulaanbataar, the capital and a major railway station. This town accounted in 1960 for about 17% of the population and accounts in 1982 for 26% of the population. At the end of the 1970s nearly 50% of the industrial production of the country was realized in the capital.[26] Apart from Ulaanbataar, the Aymag (regional district) north of Ulaanbataar crossed by the railway had the highest gross industrial output. The new planned industrial towns Erdenet and Darchan are situated in this Aymag. Future regional planning envisages the creation of a new industrial complex in Baganuur not far away from Ulaanbataar. In Baganuur an open-pit brown coal mine is under construction which is supposed to have an annual capacity of six million tons and which will supply an electrical power plant delivering energy to Ulaanbataar. Table 8 shows convincingly the relatively one-sided regional industrial development which is not likely to change in the near future. Suchebataar is also situated at the Transmongolian railway line and is on the border with the Soviet Union. Choibalsan is situated in the east of the country, but is connected with the Soviet Union by the nation's second railway-line which was constructed in the late 30s because of military reasons.

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[24] Z. Gurbadam, "Aktual'nye problemy sotsialisticheskoi industrializatsii MNR" Moskau, 1980, p. 50.

[25] W.R. Heaton, "Mongolia 1979: Learning from 'Leading Experiences'," "Asian Survey," no. 20, 1980, p. 77.

[26] Alampiev, P.M., op. cit. P. 88.

TABLE 6.—INVESTMENTS IN MONGOLIA

[In million Tugriks]

	1961–65	1966–70	1971–75	1976–79	1980	1981	1982
A. Total	3,849	5,289	7,010	11,909	3,104	4,103	3,983
Of which through aid	1,812	2,660	3,491	(8,339)	NA	NA	NA
From own resources	2,037	2,629	3,519	(3,573)	NA	NA	NA
B. Industry	NA	1,682	1,766	4,840	1,255	1,918	1,627
Of which electric energy	NA	507	298	899	812	199	530
Fuel	NA	84	94	567	207	280	346
Food processing	NA	295	201	72	29.5	37.3	94.4
Nonferrous metallurgy	NA	14	278	1,796	168	441	35
C. Agriculture	NA	1,225	1,774	1,749	413	434	470
D. Transport and communications	NA	514	967	1,167	323	350	287
E. Housing and social	NA	980	1,120	2,173	585	743	848

Note.—The exchange rate toward the ruble was relatively stable during this period 1 ruble = 4.5 tugriks.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years A. Smith, A. Schnytzer, "The Mongolian People's Republic" in "The New Communist Third World," P. Wiles (ed.), London, 1982 p. 340

TABLE 7.—STRUCTURE OF NATIONAL INCOME PRODUCED BY BRANCHES OF THE NATIONAL ECONOMY OF MONGOLIA 1960–82

[As percentage of total national income produced]

	1960	1965	1970	1975	1980	1981	1982
Industry	14.6	19.3	22.6	24.7	29.3	29.4	30.9
Construction	6.7	4.4	5.8	5.4	6.1	5.6	5.1
Agriculture and forestry	22.9	30.2	25.3	22.4	15.0	16.4	17.9
Transport and Communications	9.1	6.8	7.5	9.1	11.2	10.9	10.5
Trade, material and technical supplies, services and procurements	44.2	35.8	36.5	36.2	36.3	35.9	33.8
Other sectors of material production	2.5	3.5	2.3	2.2	2.1	1.8	1.8

Source: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

TABLE 8.—SHARE OF THE INDUSTRIAL CENTERS IN INDUSTRIAL PRODUCTION 1960–80

	1960	1965	1970	1975	1980 (plan)
Ulaanbataar	56.4	61.8	54.8	51.8	57.3
Darchan		1.3	7.6	11.3	10.5
Erdenet					10.2
Choibalsan	1.9	1.9	4.1	4.8	3.5
Suchebataar	2.4	1.5	3.0	3.0	4.4

Source: Z. Gurbadam, "Aktual'nye problemy sotsialisticheskoi industrializatsii MNR," Moskau, 1980, p. 52.

In conclusion, it may be said that the expected improvement in the Mongolian economy has not taken place since Mongolia's entry into the CMEA. Moreover, the absolute difference in income vis-a-vis the European CMEA countries has risen. The dependency on the CMEA and especially on the Soviet Union has grown. Mongolia has become integrated into the Soviet Union and continues to adjust its economic structure to the needs of the Soviet Union. The direct ties and the actual joint planning process underline this. Apart from this, the other CMEA countries such as Bulgaria and the CSSR seem to become more and more interested in Mongolian mineral resources. The further development of agriculture, especially the investments leading to an increase of grain production, seems according to past experience to be rather risky and mainly motivated by the needs of the Eastern parts of the Soviet Union. The further concentration on the mining of minerals leads to a one-sidedness of industrial development. Regional development appears to be unbalanced also. The shortage of labor—Mongolia had but 1.7 million inhabitants in 1982—is already recognized. This demographic situation throws a big question mark on the usefulness of large-scale industrial plants. But, considering the dependency of Mongolia it has no significant latitude to determine its own pattern of development.

3. Prospects

In the period of 1981-1985, the increase of national income is projected to be 41%, while total investments will rise by only 27%. Investments in agriculture shall rise by 39%. A strong growth of grain production will concentrate on fuel, energy, non-ferrous mining and construction material. The dependency on the Soviet Union will grow, for the foreign trade turnover is planned to rise by 66.5%.[27] The foreign trade turnover with the CMEA countries is planned to rise by 50-55%.[28] This development must lead to a higher share for the Soviet Union in Mongolian trade relations. Moreover, the Soviet Union is willing to double its credits and aid extended to Mongolia compared with the previous period, so there seems to be no change in current tendencies. Compared with former periods the returns on Soviet and Eastern European investments now seem to include economic returns as well as political and military returns.[29] Mongolia fits into the socialist division of labor as a supplier of mineral resources and of agricultural products for the Soviet Union.

IV. CUBA

1. Institutional and Economic Ties with the CMEA

Cuba was at a higher stage of economic development than Mongolia and Vietnam when the Cuban revolution had started. The first two decades after the revolution can be divided into five stages.

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[27] N. Patolichev, "Vneshnyaya torgovlya SSR so stranami-chlenami SEV: itogi i perspectivy," Ekonomicheskoe Sotrudnichestvo stran-chlenami SEV, no. 2, Moskau, 1982, p. 11.

[28] E. Ochir, "Vneshnyaya torgovlya MNR s drugimi stranami-chlenami SEV," Ekonomicheskoe Sotrudnichestvo stran-chlenov SEV, no. 3, Moskau, 1983.

[29] L.H. Theriot and J. Matheson "Soviet Economic Relations with Non-European CMEA: Cuba, Vietnam and Mongolia" in Soviet Economy in a Time of Change, Vol. 2, U.S. Congress, Joint Economic Committee, Washington, D.C., 1979, p. 581.

The first stage, up to 1960, covered the period of liquidation of the prerevolutionary institutions. The second stage, from 1961–63, was characterized by an attempt to introduce the Soviet System, which meant decline in sugar production and concentration on heavy industrialization. The next two stages, from 1964–1970, led to a new strategy; emphasis was focused on agriculture in order to exploit the comparative advantage of the traditional sugar sector.[30] Cuban policy leaders thought by concentrating on the traditional monoculture of sugar they would gain the necessary foreign exchange for industrial development. This industrial development was to lead to diversification of exports, import substitution and to a concentration on the natural resources and the agricultural sector. The Cubans thought that they could overcome the dependency of their economy on foreign trade by this strategy.[31] Instead, it led to an economic disaster primarily because it was accompanied by the emulation of the ideological elements of the Chinese system of that period. From 1961 to 1970, the Soviet Union had given Cuba substantial assistance, amounting to $3.568 million ($2.550 million total repayable aid and $1.018 million grants).[32] Cuba received more credits than any other country outside the CMEA.[33]

Cuba's failure to achieve the target in sugar production in 1970 marked the turning point.[34] The Soviet Union used its ample economic leverage to introduce a new strategy.[35] Cuba relied for most of its raw material imports on the Soviet Union, especially oil, and sold most of its sugar and nickel to that country for prices above the world market.

Cuba restructured its political and economic systems along Soviet lines. The ties between the Soviet Union and Cuba were institutionalized by the establishment of a joint governmental commission concerning economic and scientific cooperation. The Soviet Union granted new credits and postponed the repayment of the cumulated liabilities up to 1986. In addition, they did not claim any interest payments for these credits. On the other hand, the Soviet Union started to enlarge the bilateral ties between both countries by commanding Cuba to become a member of the CMEA, in order that the burden of assistance given to Cuba could be shared. Nevertheless, the Soviet Union remained Cuba's dominant trading partner and even increased its importance as table 2 illustrates. Up to 1982, the Soviet Union was involved in 565 projects in Cuba, out of which 264 were related to industry. One hundred forty-seven projects were already in production by 1982. The European CMEA countries were engaged in approximately 140 other projects.

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[30] A.R.M. Ritter, "The Economic Development of Revolutionary Cuba—Strategy and Performance," New York, 1974, p. 165.

[31] H. Fabian, "Der Kubanische Entwicklungsweg," Opladen, 1981, p. 479.

[32] L.H. Theriot "Cuba Faces the Economic Realities of the 1980s". "East-West Trade: the Prospects to 1985." U.S. Congress Joint Economic Committee, Washington, D.C., 1982, p. 112.

[33] A.D. Bekarevitch "Sozdanie material'no-teknicheskoi bazy sotsializma na Kube i sotrudnichestvo so stranami—chlenami SEV" "Sovetsky Soyuz i Kuba, 15 let bratskogo sotrudnichestva," P.N. Fedoseev (ed.) Moskau, 1983, p. 9.

[34] D. Lehman "The Cuban Economy in 1978," "Cambridge Journal of Economics." no. 3, 1979, p. 319.

[35] M. Robbins, "The Soviet-Cuban Relationship," "Soviet Policy in the 1980s," R. Kanet (ed.), New York, 1982, p. 148.

In 1972, Cuba became a member of the CMEA. In 1974, it entered the two CMEA banks in order to obtain more credits. Cuban politicians thought that this membership would serve as a link between the CMEA and the Latin American states,[36] a hope which partially turned out to be true. However, the expectation of new credits did not materialize since the International Investment bank provided only modest credits, amounting to less than 5% of the credits handed out by this bank.

This period in Cuba's economic development from 1959–1972 witnessed the end of one dependency and the beginning of another. But this new dependency does not seem to have created a new structural dependency because Cuba was able to overcome some patterns of underdevelopment, especially in the fields of health care, education and malnutrition.[37] Nevertheless the goals of the CMEA members forced a certain role on Cuba. Cuba had to restructure its national economy according to the needs of so-called socialist international economic integration. This was to be achieved by the pursuit of the following goals:

increase of sugar production;
increase of production of citrus fruits;
exploitation of nickel resources; and
increase of production of fish.

Those goals were designed to satisfy the needs of the CMEA countries. But the CMEA also agreed to promote industrial applications in agriculture, such as the more efficient use of sugar cane in paper and pulp manufacture, the processing of citrus fruits and the use of mineral by-products of nickel ores in steel production.[38] The Soviet Union and the Eastern European countries assisted not only in projects of the traditional sectors which fit into CMEA international division of labor, but also in machinery, oil processing, electric energy, industrial consumer goods—such as radio and television plants—textiles and transport.

TABLE 9.—CUBAN FOREIGN TRADE

[In millions of rubles]

	Total trade	U.S.S.R.	CMEA
1970:			
Exports	944	476	612
Imports	1,180	622	706
Deficits	236	146	94
1975:			
Exports	2,652	1,448	1,673
Imports	2,802	1,141	1,345
Deficits	150	[1] 307	[1] 328
1978:			
Exports	3,097	2,222	2,484
Imports	3,202	1,947	2,302
Deficits	105	[1] 275	[1] 182
1980:			
Exports	3,570	1,978	2,395
Imports	4,091	2,288	3,080

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[36] Fabian, H. op. cit., p. 507.

[37] Theriot, L.H. op. cit. "East-West Trade: Prospects to 1985," p. 104.

[38] C. Blasier, "Comecon in Cuban Development," "Cuba in the World," C. Blasier, C. Mesa—Lago (eds.) Pittsburgh, 1979, p. 250.

TABLE 9.—CUBAN FOREIGN TRADE—Continued

[In millions of rubles]

	Total trade	U.S.S.R.	CMEA
Deficits	521	310	685
1982:			
Exports	4,446	2,709	3,473
Imports	4,983	3,131	4,211
Deficits	537	422	738

[1] Surplus.

Source: Statistichesky Ezhegodnik Stran-chlenov SEV, Various years and own calculations.

The data of tables 1, 2 and 9 show the growing importance of the Soviet Union and the Eastern European countries in Cuban foreign trade. Exports and imports each account for more than one third of the gross material product. The figures of table 9 have to be interpreted carefully, because these official data may lead to incorrect conclusions. Cuba had much higher foreign trade deficits than shown but the special arrangements with the Soviet Union—cheaper oil prices according to the CMEA price formula and higher prices for sugar and nickel deliveries—led to substantial subsidies improving the balance of payments.[39] The criticism of Zimbalist[40] concerning Western estimates of these subsidies $2.638 million in 1978 and $2.667 million in 1979 seems to be justified. But, in spite of all the sophisticated calculations of the real value of Soviet and Eastern European assistance, it seems that this aid has been substantial during all the years of Cuba's CMEA membership. According to the data published by the National Bank of Cuba for the negotiations on debt rescheduling, Cuba needs "unilateral transfers" in 1983 of $1.4 billion, in 1984 of $1.86 billion and 1985 of $2.9 billion to even out its balance of payments. The rumors claiming Soviet aid in the amount of $3 billion annually during the first years of the eighties seem to be justified.

Planned coordination served as the basis for cooperation between Cuba and the CMEA members for the first time during the period 1976–1980. In 1976, Cuba was also granted the status of a less developed country within the CMEA.[41] In addition, Cuba will participate in the construction of the "Agreed Plan of Multilateral Integration Measures." In contrast to all other CMEA countries apart from Vietnam, Cuba has no special section in its national economic plan covering the trade obligations associated with economic integration with the CMEA. Cuba lists the integration measures in its foreign trade plan, investment plan and currency plan. This might be a hint that Cuba's national economic planning system still differs from that of most CMEA countries. Cuba's long-term target programs emphasize the fields of raw materials, machinery, food and transport. Cuba will participate in 41 multilateral and 15 bilateral measures.[42] Eleven investment projects are to take place in

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[39] L.H. Theriot op. cit., East-West Trade: Prospects to 1985, p. 112f.

[40] A. Zimbalist "Soviet Aid, U.S. Blockade and the Cuban Economy," ACES Bulletin, Volume XIV, no. 4, 1982, p. 141ff.

[41] H.R. Llompart, "Wirtschaftliche and Technische Zusammenarbeit Kuba—UDSSR, Außenhandel, No. 2, 1979, p. 19.

[42] Shinkov, N, Vogankov A., op. cit. p. 31.

Cuba, two relating to chemistry, 4 to transport, 4 to metallurgy and 1 to consumer goods. Up to the end of 1982 only six agreements have been signed, proving the difficulties in realizing the target programs. Four agreements are already included in the "Agreed Plan of Multilateral Integration Measures" for the period up to 1985. They include a project to construct a new nickel mine in Las Camoriocas, having a capacity of 30,000 tons. All East European countries will participate in this project. In addition, another new plant of about the same size is to be constructed with the help of the Soviet Union, which is also involved in the modernization of two older mines. Up to 1990, the mines should bring annual nickel production up to 100,000 tons, which corresponds to 50% of current CMEA production. The exports produced from these mines are destined for the CMEA countries. With these export revenues Cuba will be able to pay back its loans. Cuba will replace the role of the Soviet Union as a net exporter of nickel.

The second project listed in the multilateral plan is cooperation in the field of geological exploration. Cuba, Bulgaria, Hungary, the GDR, Mongolia, the Soviet Union and the CSSR, will organize geological explorations in Cuba up to 1990 in order to discover additional resources (chromite, oil, nickel, bauxite, copper, molybdenum, phosphorus, cobalt.[43] Cuba is said to possess the fourth largest nickel reserves in the world. Exports of nickel could amount in the long run to 50% of the value of Cuban sugar exports.[44]

The general agreement on cooperation in agricultural production and industrial processing of citrus fruits is more important in the short run. Cuba, Bulgaria, the GDR, Poland, the CSSR and the Soviet Union will be participating in this project. They will extend credits of 320 million rubles up to 1985 and of 272 million rubles from 1986 to 1990. This program should raise the production of citrus fruits to 1.4 million tons in 1985 and 2.5 million tons in 1990.[45]

The most important general agreement covers the production of sugar. The Soviet Union, Bulgaria and the GDR are involved in this program. Credits of 425 million rubles will be extended up to 1990. This should raise sugar production to 8–8.5 million tons in 1985 and to 10 million tons in 1990. The East European countries assume that their demand for sugar will grow and that Cuba will be able to satisfy this. On the other hand, East European authors mention that the industrialized CMEA countries can cease production of sugar beets and plant more profitable crops.[46]

Therefore, Cuba's role in the international division of labor is clearly marked in the long run. However, Cuba is not interested in remaining in the position of a supplier of raw materials based on large monocultures, and is therefore participating in the international product specialization in the field of machinery and chemistry. Currently, the Cuban share in intra-CMEA trade in specialized products is quite small at about 1%, but it has participated in the general agreement on the production of energy-saving chemical production. Moreover, Cuba signed in 1982 the general agreement on multilateral cooperation in the development and production of industrial robots. Further Soviet and Eastern European assistance is also designed to provide for import substitution and industrial diversification. Examples are the construction of factories producing investment goods for the sugar, sugar-processing, agriculture, energy and light industries.

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[43] Y. Siniakov "Une Alliance de Partenaires égaux," Moskau, 1981, p. 58.

[44] Th. H. Moran, "The International Political Economy of Cuban Nickel Development," "Cuba in the World," C. Blasier, C. Mesa-Lago (eds.), Pittsburgh, 1979, p. 257.

[45] Alampiev, P.M., op. cit., p. 111.

[46] Siniakov, Y., op. cit., p. 58.

2. Impacts on Economic Development

In analyzing the economic development of Cuba since 1970, the commonly accepted turning point in Cuban development, one can recognize some trends.[46a] Table 11 shows that Cuba had a relatively high growth rate of the global social product, during the early 1970's but there was a sharp decline in the period 1976–1980 and a return to rapid growth in 1981. In 1982, the economy stagnated again. Population growth was minor during the whole period, so per capita GSP must have risen. Nevertheless, Cuba was not able to close the gap between it and the Eastern European countries.

Gross industrial production had an average annual growth rate of 8.7% between 1971–1975 and 3.5% for the period 1976–1980. It peaked at 23.3% in 1981 and went down to 4.0% in 1982. On the other hand, agricultural development was considerably below target. Output was subjected to ups and downs and, in particular, the gross production of crops was very low during the whole decade 1970–1980. Total growth was only 21%. The explanation for this development may be seen in the distribution of investments which is shown in table 13. In contrast to 1970, agriculture's share of aggregate investment has been reduced, whereas the share of investment in industry has risen. In the beginning of the eighties, due to the general agreements of the CMEA countries concentrating on sugar and citrus fruits, the share of agriculture in total investment has risen again to 25%. Nevertheless, the returns from agricultural production have been very poor in the late seventies because of crop disease and pests, such as sugar rust, tobacco blue mold and African swine fever.[47] This is also shown by the data in table 12. Moreover, agricultural products suffered from price fluctuations on the world market. Although there are price subsidies in intra-CMEA trade, exports of sugar to CMEA countries cover only 60–70% of Cuba's overall sugar exports.

In addition to these problems, the Cuban economy suffered from its foreign debt situation. Cuba had not only taken credits from the East but also from the West which it was not able to service in 1982. The rescheduling of the debts forced Cuba to cut capital and spare part imports that is necessary to continue production at normal levels. Moreover, the debt situation was worsened by low world market prices for sugar in 1982. The strategy of export promotion and import substitution did not work. Moreover, the Soviet

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[46a] Price reforms at the end of 1981 distort the comparability of the statistics to some extent. See P. Gey, "Kubas Wirtschaft Zwischen Ost und West-Binnen-und Außenwirtschaftliche Aspekte," *Berichte des Bundesinstituts für Ostwissenschaftliche und Internationale Studien*, No. 47, 1983, p. 24.

[47] C. Brundenius, "Growth With Equity: The Cuban Experience (1959–1980)" *World Development*, vol. 9 No. 11/12, 1981, p. 1093.

Union, which was willing to double its assistance in the construction of industrial projects, did not agree to higher subsidies or further financial credits. The Soviet Union cut oil deliveries, which cover 95% of Cuban demand, by 10% in 1982, aggravating the situation still further. Although exports have grown consistently faster than imports since 1970, the deficits could not be reduced.

The poor economic performance in the second half of the seventies is also underlined by the poor development of labour productivity, shown in table 11. Labor productivity growth in industry nearly stagnated during 1976–1980. Only productivity in the construction industry rose, and here Cuba had the best performance among the CMEA countries; however, the construction industry is of minor overall importance, as table 14 illustrates.

TABLE 10.—COMMODITY COMPOSITION OF FOREIGN TRADE OF CUBA 1970–81

Groups of commodities	1970	1975	1980	1981
Exports:				
I	....	....	0.1	0.2
II	16.7	4.8	9.2	12.2
III	83.0	95.2	90.0	86.7
IV	.1	0	.3	.4
V	.2	....	.4	.5
Imports:				
I	36.1	32.0	34.0	32.3
II	16.2	19.6	26.0	29.0
III	29.1	29.1	23.6	23.2
IV	8.2	7.9	8.4	7.7
V	10.4	11.4	8.0	7.8

I = Machinery and Equipment.
II = Fuels, mineral, raw materials, metals.
III = Raw materials and processed products (non-food), raw materials for foodstuffs production and foodstuffs.
IV = Industrial consumer goods.
V = Chemicals, fertilizers, rubber, construction materials and other.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

TABLE 11.—SEVERAL INDICATORS OF ECONOMIC DEVELOPMENT OF CUBA 1970–82 [1]

[1970=100]

	1975	1978	1980	1981	1982
Global social product [2]	189	221	234	299	312
Population	109	113	114	114	115
Gross industrial production	152	172	180	222	231
Gross agricultural production	111	127	126	144	136
Crops	109	124	121	140	133
Livestock	117	134	140	154	142
Total volume of capital investment in the national economy	288	328	342	401	375
Volume of capital investment in industry	388	555	622	704	655
Volume of capital investment in agriculture and forestry	222	177	231	310	294
Exports	281	328	378	402	471
Imports	231	271	347	390	422
Labor productivity in industry	142	148	156	182	182
Labor productivity in construction industry	234	183	210	245	252

[1] Concerning the reliability of the data, see the remarks in C. Mesa-Lago, "The Economy of Socialist Cuba," Albuquerque, 1981, p. 69.
[2] In current prices.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years; C. Mesa-Lago; "The Economy of Socialist Cuba," Albuquerque, 1981, p. 34; A. MacEwan, "Revolution and Economic Development in Cuba," New York, 1981, p. 232 ff.

TABLE 12.—PHYSICAL OUTPUT OF SELECTED PRODUCTS IN CUBA 1970–82

[In thousands of metric tons]

Products	1970	1975	1978	1980	1981	1982
Sugar (in white sugar equivalent)	6,989	5,943	7,084	6,292	7,328	7,434
Tobacco	32	42	41	8.2	54.6	44.9
Citrus fruits	[1] 124	181	282	444	471	530
Fish	100	138	205	181	160	189
Nickel	37	37	35	38	40	....

[1] In 1971.

Sources: Statistichesky Ezhegodnik Stran-chlenov SEV, various years, C. Mesa-Lago, "The Economy of Socialist Cuba" Albuquerque, 1981 p. 37. Fischer Welt Almanach '84, Frankfurt 1983.

TABLE 13.—INVESTMENTS IN CUBA

[In million Pesos]

Sectors	1970	1975	1978	1980	1981	1982
A. Total	800	2,304	2,624	2,739	3,206	2,996
B. Industry	163	634	904	1,010	1,150	1,070
of which electric energy		52.3	73.5	123	112	143
Fuel		8.2	9.1	34.7	58.5	67.1
Nonferrous metallurgy		8.5	78.0	168	165	122
Machinery		63.2	97.7	145	138	144
Textiles		2.7	38.8	107	79.8	77.4
Food processing		315	369	223	292	299
C. Construction	84	141	112	115	133	131
D. Agriculture	261	577	461	602	808	767
E. Transport and communication	153	388	427	406	492	448
F. Housing and social	61.1	170	208	251	278	218

The exchange rate toward the ruble was relatively stable during this period (1 ruble = 1 Cuban peso).
Source: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

TABLE 14.—PERCENTAGE DISTRIBUTION OF GLOBAL SOCIAL PRODUCT BY ECONOMIC SECTOR

[All based on current prices]

	1970	1972	1975	1978
Agriculture	14.7	11.7	12.1	12.0
Industry	47.9	42.8	37.4	36.1
Construction	5.2	7.7	9.0	9.5
Transport	9.4	7.9	7.2	7.2
Communication	.8	.7	.6	.7
Commerce	22.0	29.2	33.7	34.5

Source: C. Mesa-Lago, "The Economy of Socialist Cuba," Albuquerque, 1981, p. 56.

The decline of the share of agriculture and of industry in Cuba's global social product (table 14) since Cuba's membership in the CMEA is puzzling. The CMEA provided a large assistance to amounts of projects relating to these two areas, and one would have expected their growing importance. One possible explanation may be the concentration of CMEA sponsored industrialization, which concentrated mainly on fields which are connected with the traditional production of goods, such as sugar, tobacco and nickel. Development stagnated in these fields and the industrial processing of these goods was based on traditional energy consuming technologies. Moreover, the negative impacts of adoption of the Soviet economic system were also realized. There was a lack of incentives for raising innovation, productivity and efficiency. A large, welleducated labor force was created which was frustrated by a development strategy aimed at the fostering of the traditional sectors. The number of persons employed in agriculture rose from 1970 to 1982 and was higher than the number employed in state industry. The relative share of workers employed in state industry declined from 22.9% in 1970 to 20.8% in 1982. Consequently, Cuba was able to offer Eastern Europe qualified guest workers and specialists. This offer was not accepted, but many of these specialists were sent to Third World countries substituting for East Europeans. Nevertheless, unemployment, although not as high as in the prerevolutionary period, still seems to be a problem in Cuba. The actual unemployment figure amounts only to 3–4%, but the problem of seasonal employment (sugar harvest) has not been solved due to the insufficient mechanization of agriculture. Consequently, Cuba has not achieved the main goals of CMEA membership, that is the reduction or elimination of the gap between the Eastern European countries and the less-developed members.

Concerning the regional disparities, one has to acknowledge Cuba inherited a one-sided regional distribution of industry. Twenty percent of the population is still living in the capital, but this share is declining. After the revolution 50% of all industrial enterprises were in Havana, and these produced 75% of industrial production.[48] The activities which have taken place in the fields of investments in transport and industrialization show that the efforts in reducing regional disparities have been successful. The new projects are concentrated near the places where the agricultural products are harvested and where the resources are found. Moreover, investment in port facilities and the railway system is intended for the same goal of eliminating the strong regional disparities.

3. Prospects

The Cubans envisage the achievement of the East European level of development by the year 2000. This is to be achieved by further intensification of integration into the CMEA and by closer links with Latin American and the Carribean states. The key sectors of development will be sugar, citrus fruits, mining, metallurgy, machinery, electrotechnology, chemistry and consumer goods. The industrial development is to be related to the three aforementioned fields sugar, citrus fruits and mining. Whereas the overall production goals of the Cuban economy are quite modest up to 1985/90, the goals in the CMEA oriented sectors are very ambitious. Sugar production should rise to 8–8.5 million tons in 1985 and 10–10.5 tons in 1990; growth in citrus fruits production should increase at least by 15% annually (1.4 million tons in 1985 and 2.5 million tons in 1990) and nickel production should rise to 100,000 tons annually in 1990. The Soviet Union is willing to double its aid for CMEA projects for the period 1981–1985, but it becomes more and more apparent that the Soviet Union will not continue to raise its subsidies for oil deliveries.

It seems doubtful that these production growth goals will be achieved in time. Investment in the nickel mines has been postponed several times in the past; the nuclear power project is considerably behind schedule;[49] and projected capacity has been reduced by 50%. Moreover, the debt problems will still be pressing, even after the scheduling of the debts with the West. In 1986 Cuba has to pay back its pre-1972 loans from the Soviet Union. Exports will have to rise simply to achieve debt repayment. At this moment, the strategy of import substitution has not been completely successful. The cuts in raw material and spare parts imports in 1982 and 1983 have led to an insufficient use of industrial capacity. The dependency of Cuba on its traditional production sectors has grown. Although industry related to these traditional fields has been built up and should contribute to future economic independence for the country, there are severe doubts concerning this prognosis.

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[48] Alampiev, P.M., op. cit., p. 95.

First, the growth of sugar demand at sufficient rates is unlikely. Cuban and CMEA planners plan on a growing demand in Eastern Europe. Nevertheless, one-third of Cuban exports still must be placed on the world market, where they are subject to erratic price changes. Moreover, a structural change of demand may harm Cuba's Western market for sugar. In recent years, for example, a high-fructose syrup has been developed attracting former consumers of sugar.[50]

The future of the nickel market is also doubtful. First, achievement of an international agreement on a seabed mining code might force a decline on the world nickel prices.[51] Second, most Cuban deposits are laterite ores with low nickel content, high energy intensity i.e., units of standard energy to refined metal output is required. This will make the extraction eight to ten times more costly to process than that of other producers, such as Canada.[52]

Concentration on monocultures in agriculture may have negative effects since a disease or climatic change makes the economy more vulnerable. The lessons of the end of the seventies and 1980 should have been learned and agreement on diversification intensified.

By accepting the CMEA division of labor, Cuba's dependence on the CMEA has grown. Cuba hopes to overcome this dependency by building up industry, but this strategy seems to be very risky and unlikely considering the experiences of the past and prospects for the future. Benefits to other CMEA members notwithstanding, Cuba's of allocation of resources is being determined by static comparative advantage that will not help its long-term development prospects.[53]

V. VIETNAM

1. Institutional and Economic Ties with the CMEA

Among the group of the less-developed countries in the CMEA Vietnam is the least developed. The reunification of Vietnam in 1975 aggravated the already existing economic difficulties. Whereas the northern part had a socialist system based on central planning since 1955, the southern operated under a decentralized market system. There was, however, a high degree of complementarity between the two regions, because the North was industrialized and owned 80–90% of the mineral resources and the South was based on agriculture.[54]

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[49] I. Kapranov "Mit Unterstützung der UdSSR," *Außenhandel*, No. 6, 1982, p. 14.

[50] Hagelberg, G.B. op. cit., p. 49.

[51] Moran, T.H. op. cit., p. 267.

[52] Mesa-Lago, C., "The Economy of Socialist Cuba," op. cit., p. 71.

[53] Ed. A. Hewett, "Cuba's membership in the CMEA," *Revolutionary Cuba in the World Trend*, M. Weinstein (ed.), Philadelphia 1979, p. 62.

In 1975 the new rulers began to install incrementally the socialist system in the South. The necessary preconditions were not present for the transformation to industrialization and so plans had to be made for their introduction. Small-scale industry was to be transformed into large-scale industry with the development of heavy industry as a priority. At first, however, Vietnam had to overcome the damages of the war. The first task was to satisfy the basic needs of the population.[55] This meant intensification of agricultural development and of food and light industry.

Vietnam's policy was dependent on foreign financial assistance for the provision of the necessary investments.

Up to 1978 Vietnam attempted to attain a political and economic balance between the West, China and the CMEA. However, expectations for assistance from all blocs did not materialize. Moreover, the internal economic problems became more pressing due to the inherited structural disproportions and due to the relatively unsuccessful socialization of the South.

In 1978, after previously joining the CMEA banks in 1977,[56] Vietnam became a full member of the CMEA. It was told to restructure its economy according to the needs of the CMEA, meaning the adoption of a strategy which concentrated on agriculture, exports of tropical agricultural products, exploitation of mineral resources and the export of vast labor resources to other CMEA countries.[57] The CMEA countries, expecially the Soviet Union, made up for the lost Chinese aid which ceased after the border conflicts and the invasion in Kampuchea. Vietnam then became completely dependent on the CMEA, and the Soviet Union in particular was believed to have financed 60% of total capital investments during 1976–1980.[58]

Cooperation with the CMEA countries, which was based on bilateral ties, developed slowly. A long-term treaty with the Soviet Union, concluded at the end of 1978, intensified the development of bilateral ties as other East European countries followed the example of the USSR. This situation started to change in 1979 when Vietnam was granted the status of a developing country within the CMEA. Vietnam received not only lower interest rates for development credits, but also preferential prices for exports to other CMEA members.

Moreover, in 1979 the planning committee of the CMEA started to work out a special development program for Vietnam.[59] This program was adopted by the Executive Committee in 1981, but only in 1982 were the first concrete measures spelled out in detail. These programs will be included in the long-term target programs and the multilateral plan. As of the end of 1982 no concrete measures belonging to the current multilateral plan for the period 1981–85 had been announced, clearly indications that the organizational mechanism of the CMEA is working slowly and inefficiently.

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[54] Ngyuen Thien Hung, *Economic Development of Socialist Vietnam*, 1955–1980, New York-London, 1977, p. 15.

[55] I. Kamenka, "La situation économique du Vietnam de 1976 a 1980," "Le Courier des Pays de l'Est", No. 255, Oct. 1981, Paris, p. 34.

[56] M.E. Trigubenko, Vietnam na puti stroitel'stva sotsializma, Moskau, 1979, p. 177.

[57] E.P. Glazunov, Preobrazovanie chastnoi promyshlennosti i torgovli vo V'etname, Moskau, 1981, p. 177

[58] D. Pike, "The USSR and Vietnam: Into the Swamp," *Asian Survey*, No. 19, 1979, pp. 1159-1170.

[59] Shinkov, N. Vogankova, A., op. cit., p. 31.

At present Vietnam's participation is envisaged in 30 of the multilateral agreements that constitute the CMEA long-term target programs. The country will cooperate in the field of agriculture and food industry (specialization and cooperation in the production of tropical fruits, tea, coffee, natural rubber etc.) and in the field of consumer goods (production of textiles, clothing, carpets, furniture, shoes etc.). This focus on agricultural and light industry is underscored by the fact that out of 121 joint investment projects within the framework of long-term target programs only one in the field of transport will include Vietnam. The CMEA countries are primarily interested in Vietnam's natural resources, including coal, bauxite, tin, lead, zinc, copper, titanium, chromite, manganese, gold, silver, probably oil and gas. A general agreement on the development of these resources was signed in 1980 that provides for the assistance of Bulgaria, the GDR, Hungary, Czechoslovakia and the Soviet Union in Vietnamese geological exploration. In 1980, the Soviet Union also founded a joint enterprise with Vietnam, called "Vietsovpetro" designed to exploit oil and natural gas on the continental shelf of South Vietnam.

During the current period, 1981–85, the CMEA countries are engaged in about 100 new projects. The USSR accounts for 40 of these projects. These projects concentrate more and more on agriculture, food and light industry. More than 100 larger industrial projects have been cancelled or postponed because they were too expensive or their payoff period was too long. The external debt of Vietnam has continued to grow not only because of poor economic performance but also because of military expenditures, which have amounted to at least 50% of the state budget. Most of the credits provided by the East European countries have been given on a compensation basis in which the output of the new industries is to be used to pay back the loans. These countries, and in particular the Soviet Union, have no longer been willing to increase their financial assistance to Vietnam. Indeed, the Soviet Union even threatened to cut its credits by 40–60%—a threat which did not materialize. In fact, since 1980 the Soviet Union has significantly increased its exports and credits to Vietnam, as table 15 illustrates. Vietnam is supposed to supply food for the far eastern portion of the Soviet Union, and serve as a naval base.[60] In return Vietnam got credits and financial aid amounting to more than a billion US dollars annually from the CMEA. Moreover, the number of Vietnamese people working in Eastern Europe is rising. In 1982, Tass reported that 11,000 Vietnamese were working in the Soviet Union. This serves to reduce Vietnam's domestic unemployment, and to improve Vietnam's trade balance with the Soviet Union.

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[60] D. Pike, "Vietnam in 1981: Biting the Bullet," *Asian Survey*, No. 22, 1982, p. 74.

2. Impacts on Economic Development

Considering the short period of membership in the CMEA and the bureaucratic and inefficient working of this organization, it is too early to assess the full impact of CMEA membership on the economic development of Vietnam. Moreover, the empirical data are very weak and Western inferences from them can only be tentative. Statistical problems are compounded by the fact that the country still has a vast non-state sector that cannot be controlled. Table 18 shows that only about 12% of the labor force is currently employed by the state sector.

TABLE 15.—VIETNAMESE FOREIGN TRADE DATA 1976–82

[Million ruble in current prices]

	Total trade	U.S.S.R.	CMEA
1976:			
Exports	232	63.6	93
Imports	680	232.5	341
Deficits	448	168.9	248
1977:			
Exports	324	129.8	167
Imports	812	274.2	392
Deficits	488	144.4	225
1978:			
Exports	343	152.3	203
Imports	753	305.5	488
Deficits	410	153.2	285
1979:			
Exports	305	147.6	305
Imports	831	446.2	650
Deficits	526	298.6	447
1980:			
Exports	312	157.5	210
Imports	989	454.9	690
Deficits	677	297.4	480
1981:			
Exports	329	167.2	NA
Imports	935	724.6	NA
Deficits	605	557.4	NA
1982:			
Exports	404	206.5	NA
Imports	982	304.2	NA
Deficits	578	597.7	NA

Source: I. Kamenka, "Le Courier des Pays l'Est", No. 255, October 1981, p. 47. The data for 1981 and 1982 were calculated according to the data of the Statistical Yearbook of the CMEA 1983. The Soviet data do not seem to make a difference between commercial deliveries and aid as in the case of Mongolia.

TABLE 16.—SEVERAL INDICATORS OF ECONOMIC DEVELOPMENT OF VIETNAM 1976–82

[1975 = 100]

	1976	1977	1978	1979	1980	1981	1982
National income produced	115	117	120	119	113	122	132
Population	103	106	108	110	113	115	118
Gross industrial production	113	124	131	125	113	130	148
Gross agricultural production	110	105	105	112	119	122	133
Total volume of capital investment by the State in the national economy	132	161	171	162	159	130	122
Out of which:							
In industry	116	139	151	159	179	148	178
In agriculture and forestry	180	290	283	264	213	234	132

TABLE 16.—SEVERAL INDICATORS OF ECONOMIC DEVELOPMENT OF VIETNAM 1976–82—Continued

[1975=100]

	1976	1977	1978	1979	1980	1981	1982
Exports [1]	151	218	231	205	259	273	335
Imports [1]	139	166	154	170	146	138	145
Labor force in the State sector of the national economy	107	118	127	138	138	138	137

[1] At current prices in relevant years.

Source: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

By most of the official indicators of economic development, the Vietnamese economy stagnated during the second half of the seventies. In particular, per capita income seems to have levelled off. Investments in agriculture were to rise faster than in industry. However, output of the agricultural sector lagged behind the plan targets, which had to be revised downwards. Although exports rose much faster than imports the trade deficits were still very high, as Table 15 indicates. In 1977, the structure of exports was composed of 44% agricultural products, 30% light industry, 9% small-scale industrial products and 17% minerals. Imports on the other hand, consisted of machinery and equipment and food.[61] For the period 1976–1980, exports to the Soviet Union consisted of agricultural products (19%) and industrial and handmade consumer goods (76%), whereas imports consisted of raw materials and combustibles (38%), machinery and equipment (29%) and consumer goods including food (33%). Economic growth has been revived in the eighties, as physical output figures for some selected products illustrate (Table 17). In particular, the output of rice has risen. The explanation for this development may attributed to a number of factors: (1) The high military and foreign policy costs have been reduced in the early eighties. The costs of military activity even when mainly reimbursed by the Soviet Union were quite high because many skilled workers were removed from their working-places. (2) The disastrous consequences of the exodus of the boat people have been dealt with. Some sectors, especially mining, were hit hard by the exodus because 60% of the working force was of Chinese origin. (Table 17) (3) Moreover, natural calamities such as the drought in 1977, floods in 1978 and typhoons and tropical storms in 1980 had negative impacts on agricultural performance. (4) The policy of settling people in the New Economic Zones was only partially successful because living-conditions were bad in these regions. (5) Poor economic management led to a further crisis. In 1979, the government pursued a new policy of liberalization which allowed for an increase in private economic activity.[62] This policy was continued in the eighties and has led to stagnation of employment in the state sector. (Table 18). The improvement of material incentives and allowance for market-type mechanisms led to the postponement of the construction of socialism in the entire country. (6) These shortcomings were aggravated by the debt crisis during which the deficiency of foreign exchange resulted in a reduction of imports and shortages of raw materials. Many factories and processing plants worked below capacity. This exacerbated the unemployment problem, leading to the current unemployment rate of at least 4%. Aside from these problems of foreign debt and unemployment, most of the other problems are not so pressing at the moment, and the situation in the eighties has improved. It is doubtful, however, if this improvement is due to Vietnam's integration into the CMEA.

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[61] Y.N. Pivovarov, M.P. Isaev, "Razvitie Narodnogo Khozyaistva Sotsialisticheskoi Respubliki Vietnam," Moskau, 1980, p. 161.

[62] Ch. Nyland "Vietnam, the Plan: Market Contradiction and the Transition of Socialism," *Journal of Contemporary Asia*, 1981, vol. 11, No. 4, 1981 p. 445.

TABLE 17.—PHYSICAL OUTPUT OF SELECTED PRODUCTS IN VIETNAM 1976–82

Products	1976	1977	1978	1979	1980	1981	1982
Electric energy (million kwH)	2,928	3,473	3,846	3,857	3,640	3,851	4,045
Coal (million tons)	5.6	6.2	6.0	5.5	5.3	6.0	6.1
Steel (1,000 t)	74.6	88.4	98.0	10.6	63.5	36.1	47.1
Cement (1,000 t)	738	845	843	705	637	538	710
Sugar (1,000 t)	72.8	68.8	80	94	174	271	222
Rice (1,000 t)	12,076	10,885	10,040	10,742	11,679	12,522	14,169
Vegetables (1,000 t)	2,381	2,093	2,268	2,032	2,047	2,281	2,550

Source: Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

TABLE 18.—LABOR FORCE DATA

[Amounts in millions]

	1976	1977	1978	1979	1980	1981	1982
Total labor force	22.1	23.0	24.5	25.5	26.5	NA	NA
Agricultural labor force	13.4	13.9	14.5	15.1	15.7	NA	NA
Nonagricultural labor force	8.7	9.1	10.0	10.4	10.8	NA	NA
Industrial employed in manufacturing, mining and electrical power	2.1	2.0	2.0	2.0	2.2	NA	NA
Employed in the State sector	2.6	2.8	3.1	3.3	3.3	3.3	3.3
Out of which:							
In industry	.5	.6	.7	NA	.7	.7	.7
In construction	.4	.5	.5	NA	.5	.5	.4
In agriculture	.2	.2	.3	NA	.3	.3	.3

Sources: National Foreign Assessment Center, Handbook of Economic Statistics, Washington, 1981 and Statistichesky Ezhegodnik Stran-chlenov SEV, various years.

3. Prospects

Vietnam has reduced its ambitious goals for the current period. Produced national income is planned to rise by 5–6% annually, agricultural production by 6–7% and industrial production by 4–5%. The main task appears to be the attainment of self-sufficiency in food supplies and surplus. Consequently, the increase in agricultural production has to rise, not only to provide the population with its basic needs, but also to increase exports. The socialist transformation of the South remains considerably behind schedule. Vietnam still cannot exist without foreign aid and is heavily dependent on the CMEA, in particular on the Soviet Union. As a result, its economy is pressed into a pattern which suits CMEA needs. Vietnam has to export agricultural products and mineral resources. Its division of labor is being forced to conform to a static comparative advantage structure that is unlikely to be appropriate for a longer term dynamic transformation of the economy.

VI. Conclusions

The case studies of the three less-developed countries within the CMEA suggest that the Soviet Union has renounced the idea of forcing on each CMEA country the Soviet model of development. On the contrary, the Soviet Union has discovered some aspects of the international division of labor that work to its advantage. Since the financial and natural resources of the Soviet Union have become more scarce, it is both unwilling and unable to take over a larger foreign burden solely for political and military reasons. The economic motive for trade has become significantly more important. The application of Mozambique for membership in the CMEA was rejected in 1981, apparently because the economic cost to the Soviet Union exceeded the political and military benefits. The less-developed countries in the CMEA have increasingly had to adjust their economic role to fit the needs of the industrialized CMEA members. This has forced them to accept a pattern of international division of labor that seems unlikely to achieve the goal of closing the development gap between the less-developed and the industrialized members of the CMEA. It is more likely that this course of development will lead to an increasing dependency on the developed CMEA countries.

THE PARTIAL INTEGRATION OF THE CEMA COMPUTER INDUSTRIES: AN OVERVIEW *

By Seymour E. Goodman **

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SUMMARY

The lack of general success in CEMA cooperation and integration, and Western analyses of communist computing capabilities that concentrate on the USSR and narrow technical comparisons with the US, have overshadowed the substantial development and integration of the CEMA computer industries that have taken place during the last fifteen years. Assorted economic and technological factors have been at least as effective in bringing this about as Soviet pressure. Although involving considerable trade and tech-

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nology transfer from the West, progress in the CEMA computer industries has been impressive relative to their own past and in terms of certain important milestone accomplishments.

I. Introduction: Why Computers?

The CEMA countries are divided by language barriers, poor communications systems, the lack of fluid and flexible international financial institutions and arrangements, national pride, and assorted bad feelings that have been cultivated over centuries. These circumstances, and the complexity of the full array of computing products and technologies, would appear to make a joint venture in this area particularly risky and potentially ill-fated.[1] Thus the basic question: Why would CEMA choose computing for a major cooperative undertaking?

Briefly, the answer may be stated as a list of several important needs, opportunities, and problems:

(1) Current and potential applications of computerized systems are so pervasive, and are moving so far beyond the cost/performance capabilities of all-human systems, that no modern economic or military establishment will be able to function efficiently or competitively without them.

(2) Computers are high value-added products. This is a good technology for resource poor, industrialized countries to pursue.

(3) Each East European CEMA country is under pressure to export to the Soviet Union.

(4) The range of computing technologies is such that no small country can cover much of this spectrum. Talent and capital requirements are high, and the internal market is too small to permit good returns on investment.

(5) None of the East European countries has the hard currency to import all of its computing needs from the West, although much of this would clear export controls. Such dependence would not be economically, politically, or militarily acceptable to the communist governments. This does not preclude equipment purchases or technology transfers for selected applications or to help build indigenous capabilities.

The East European members of CEMA have several options:[2]

(a) They can do without much computing resources.

(b) They can look for what they need in the West.

(c) They can look to the USSR.

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[1] We define technology as the know-how to specify, design, build, maintain, and use a product. The transfer of a product is a technology transfer only to the extent that it reveals this kind of know-how. Normal trade in computer products is often a weak form of technology transfer. For discussions of mechanisms for the transfer of computer technology, see [Good81; Good82b]. For an explanation of the use of reference identifiers in this paper, and other notes on sources, see appendix A.

[2] In terms of production capacity, user base, support base in other technologies, and range of applications, the USSR makes any of the other CEMA countries look unimportant. We limit our interest in the Soviet Union to those aspects of its efforts which relate directly to the East Europeans. For several fairly recent studies of computing in the USSR see: [Davi78; Hamm83] (hardware), [Good79b] (broad coverage), [Dale79; Good79c; Hamm83] (software), [Cave80; Cave82; Cony80; Mche85] (management systems). Since the late 1970s, Soviet progress in some areas of computing has been substantial, while others remain badly retarded. Studies of Soviet and East European microcomputers and computer aided instruction are in preparation with R.A. Stapleton.

(d) They can each attempt to develop an independent and self-sufficient industry.

(e) They can try to undertake a cooperative effort, with a partition of the necessary technologies.

Our discussion makes option e, with selections from b and c, look like an obvious necessity. However, students of East European affairs know that "obvious" solutions are rarely easily adopted in that part of the world. The current state of this obvious solution is not perfect, and each participant is struggling with its own mix of all five possibilities.

Two important events that occurred around 1970 make that year a useful separator of the analyses to follow. In December 1969, the USSR and five East European countries signed the multilateral agreement on collaboration in the area of the development, production and utilization of computers.[3] In 1971, the 25th Session of CEMA came forth with its "Comprehensive Program for the Further Extension and Improvement of Cooperation and the Development of Socialist Economic Integration by the CMEA Member Countries".[4] The integrated computer effort was to be an important project within this Program.

This article is a summary and update of a report written for NCSEER.[5] A recent survey of research on CEMA integration identified four areas needing work.[6] The present study contributes to two of these by looking into the integration of a specific industry, and by trying to improve our understanding of the relationships between technical progress and integration.

II. The Extent of Integration Before 1970

The pre-1970 era is usefully partitioned into two subperiods.[7] The 1950s were characterized by the construction of several experimental machines of somewhat original design. Developed for the most part in academic environments, these early computers rarely managed to make it into serial production. In the 1960s, the East Europeans were forced to recognize an increased need for equipment for data processing and process control, along with their own inability to produce sufficient quantities and mixes of such equipment domestically. Not surprisingly, the 1960s were characterized by a greater reliance on Western and Soviet machines, and by 1969 the proliferation of incompatible computer models and continuing shortages had become a serious problem. During neither subperiod is there evidence of serious multilateral integration. Although the goals of 1971 had not yet been formally proclaimed, it is nevertheless striking how little had been achieved in the preceding twenty years.

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[3] The original signatories were Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and the USSR. Cuba and Romania joined in 1973.

Coverage of Yugoslavia is outside the scope of this study. Although it imports computer equipment from CEMA, it imports more from the West. Yugoslavia also supports a small industry of its own.

[4] [Cmea71].

[5] [Good82].

[6] [Mare81].

[7] For more on the history of East European computing, see [Apok74; Good84; Mund81; Prvt77].

The three technically most advanced countries, East Germany, Czechoslovakia, and Poland, had computer industries that could not meet their own internal needs. Innovation that existed in the 1950s faded away, and by 1969 most of the domestically manufactured models were copied from the West. Intra-CEMA computer trade was unimpressive. Only a trickle of people crossed borders for conferences, training, and equipment servicing. Bulgaria, Cuba, Hungary, and Romania had accomplished little.

Eastern Europe had over 1000 computers in 1969. Almost all were small machines and, except for some Western imports, suffered from deficiencies that made them difficult to use. These included the lack of good peripherals, vendor hardware maintenance, and software support. So the computers that did exist were often underutilized in quiet and desperate isolation by their owners. This situation was compounded by the large number of different computer models, making for poor compatibility; shortages of spare parts and trained personnel. To make matters worse, different units of the same Soviet and domestically produced models were often incompatible.

The Soviet role in all of this was less than spectacular. The USSR may have exploited some East European developments. There may have been Soviet overtures for greater cooperation, but they were apparently resisted. Although arguably the second largest computer producer in the world, the USSR seemed reluctant to sell its machines abroad and pushed for hard currency payment. The quality and reliability of Soviet equipment was poor, spare parts and service were very difficult to obtain, and the delays and aggravation involved in dealing with the Soviets were great. More positively, a notable Soviet technology transfer was the design of a small computer that could be built by some of the less sophisticated industries. This machine was reproduced in at least three countries: Hungary, Romania, and China.

III. Steps Toward Technological Integration

The almost total lack of integration among the CEMA computing communities by the late 1960s was due in part to a weak perception of the economic value of computing. This changed as the East European economies began to suffer slowing growth rates, declining productivity, and increases in the complexities of planning and administration. The political and economic leaderships of CEMA began to seek solutions to these problems that stressed the development and application of technology. The broad potential applicability of computing to economic development made it a natural centerpiece technology for these efforts.

A. The ES-I Joint Program [8]

The West influenced further developments in two critical ways: by providing an experience base that helped change CEMA perceptions, and by providing explicit models for practical efforts. Since the late 1950s, some advanced countries had been using computers on a large scale to improve productivity and to help alleviate difficulties similar to those being experienced in CEMA. The computer industry itself, and computer use in general, were becoming bright features on the Western economic scene.

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[8] [Davi78].

Of particular importance was the announcement and start of production of the IBM S/360 family of upward compatible computers in 1964–65. In terms of range of computing power, repertoire of peripherals and software, and volume of production, the S/360 dwarfed anything that then existed in the world. Other Western companies were making a broad spectrum of machines and peripherals; a wide range of software products was being developed and disseminated; and the fledgling minicomputer sector was starting to claim an important place in the industry.

Although their own efforts were lagging, CEMA was not oblivious to developments elsewhere. They could see Western implementations of fairly successful solutions to problems similar to those they were experiencing. The GDR followed IBM with work on a S/360 compatible mainframe. The USSR made two, essentially unsuccessful, efforts to produce upward compatible families, one an indigenous design and the other a copy of the S/360.

One approach to improving the overall CEMA computing situation would involve a radical reconfiguration based on regional cooperation—the sort of solution that would be regarded with suspicion by more than a few East Europeans. Within this approach, a key project that could take them well beyond rhetoric would be the joint development and production of a respectable common hardware base, particularly an upward compatible family of computers and peripherals.

The leading role for any such effort would necessarily belong to the USSR. It was the only CEMA country whose computer industry had the capacity to undertake the task on its own, and it was the only country that could possibly coordinate the efforts of the others. Its two failures also provided valuable experience.

Soviet interests in a major joint undertaking were clear: to draw on some of the expertise and workmanship of the East Europeans, to turn the East Europeans away from looking westward for this technology, to tighten economic ties, and to provide technical standardization for Warsaw Pact and other applications. Substantive cooperation had to await a spectacularly successful Western model, improved perceptions of need and opportunity, and the recognition by some of the East European countries that they would not be getting far on their own.

During 1967–69, these conditions had been met to the extent that the USSR was successful in enlisting the official participation of five other CEMA members in a third Soviet effort to build an upward compatible family. This undertaking formed the basis for the 1969 multilateral agreement. The GDR seems to have played a major role in formulating the overall strategy. It was the leading advocate of the policy to make the CEMA family, known officially as the Unified System (ES) and more popularly as Ryad, a functional duplication of the IBM S/360. Most of the East European countries had more experience with IBM equipment than the Soviets, and had been favorably impressed. They had less than favorable experiences with Soviet computing equipment and were probably wary of any Soviet design effort.

There were good technical and economic reasons for adopting this strategy. The project had very high level backing, and vast resources were being poured into it. The acquisition of functional capability was far more important than achieving the then world technical state-of-the-art. The lack of experience and imagination in CEMA, plus the fact that there was no need to compete on the world market, made copying a proven system an obvious choice. Another obvious choice was the S/360, the West's most successful system, and probably the only one the CEMA participants could agree on. Furthermore, there was precedent that the IBM system could be successfully duplicated. For example, RCA had done so shortly after the IBM originals appeared. Finally, one of the great CEMA shortcomings was in software—both systems and applications software, and both development capability and inventory—so the prospect of building machines that could directly use the billions of dollars worth of programs that IBM and its competitors and customers had developed must have been appealing. Thus CEMA had reason to hope that time and risk could be saved early in the undertaking by using a well established design, and after production started, by using Western systems and applications software.

In terms of technical achievement and integration, the ES-I equipment was more successful than most analysts and participants might have expected. Between 1971 and 1975, several small and medium scale ES computers and scores of peripherals went into production. During 1975–77, some of the earliest models were replaced by upgrades, and a smaller wave of peripherals appeared.

While these developments were hardly without serious technical problems and not all the CEMA countries participated with the same vigor as the GDR (see Section 4), the overall achievement was substantial. Most of the ES equipment functionally duplicated the S/360 in that they shared a common architecture and machine language, used common data interfaces, and had a considerable degree of IBM software compatibility. Significantly, the equipment made by the participating countries was, for the most part, interoperable. Ryad production far outstripped that of other models, and computer centers used equipment mixes pulled together from the participating countries.

B. Other Major Joint Programs [9]

By 1974 developments in the ES mainframe project had been encouraging enough to start a similar program for minicomputers. The same basic strategy was to be followed, but in this case the design choice was not so obvious. Each of the CEMA participants had developed its own line of minicomputers, often on the basis of Western designs, and there was no hurry to give these up. Although all of the Ryad participants formally signed the minicomputer cooperative agreement, it seems that the Soviets were on their own initially. A Soviet ministry took the leading technical role, but the two primary research and development institutes favored the functional duplication of two different US designs. The result was a compromise partition of the first group of four Small System (SM) models. Two would be based on the Hewlett-Packard (HP) 21xx, and the other two on the Digital Equipment Corp. (DEC) PDP-11 series.

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[9] Unfortunately, there are no comprehensive analyses available for all these programs. For broad technical assessments of the new ES, SM, and networks programs, see [Hamm83]. There is no comparable assessment of the international CEMA software undertakings.

Whereas the development and production of the ES-I models were distributed across the Warsaw Pact CEMA members except Romania, the initial production (in 1977) of the SM-I models was limited to the USSR. But by 1981 most of the CEMA countries, including Romania and Cuba, had started manufacturing DEC-like machines. These computers use most of the ES peripheral hardware, although a separate line of SM peripherals has emerged.

By 1975-76, CEMA thought enough of the two groups of ES-I equipment to begin an ES-II undertaking patterned closely after the IBM S/370, which went into production in the early 1970s. The S/370 was an improved version of the S/360 that maintained a migration compatibility with its predecessor, i.e. software that ran on the S/360 could usually run on the S/370. By 1979, most of the ES-II models were at least in the prototype stage, and were shown at the Ryad tenth anniversary exhibit in Moscow. The new computers were accompanied by an assortment of new or upgraded peripherals. During 1978-82, at least initial production had been announced for a half dozen models, and some of the first production variants were being superceded by upgrades. There continue to be serious technical problems in certain key areas, notably the volume production of reliable semiconductor memories and large capacity disk stores. However, it is important to note that East European participation in the ES-II project seems to be more uniformly positive than was the case at the start of the ES-I effort (see Section 4).

An ES-III program was announced in 1977, although little information has appeared since then. Announcements of what are believed to be ES-III models have been appearing since 1980, but without as much fanfare as might have been expected. These machines may at least partially follow IBM patterns of improvement in components, orientation towards telecommunications, etc.

Another major cooperative hardware program is the SM-II group. Several models are distributed over almost all of the CEMA countries. The processors are not sophisticated by Western standards, but are based on more advanced microelectronics than the SM-I models. The DEC PDP-11 instruction set and bus architecture are widely supported. In contrast to the initial production of the SM-I models, the East European participants are actively involved from the start.

A fledgling cooperative effort of sorts is emerging for computer networks. Much of this is taking the form of a distribution of labor for the manufacture of equipment for telecommunications equipment under the ES programs. The East Europeans appear to be at least as active as the Soviets. Otherwise, CEMA progress on the construction of operational transnational networks has been unimpressive.

During the 34th Session of CEMA in 1980, the eight participants in the ES-SM cooperative programs renewed their commitments by signing a Multilateral Specialization Agreement on Electronic Computer Technology. The 35th and 36th Sessions in 1981 and 1982 produced additional accords for microelectronics, industrial robots, communications equipment, and other hardware.

The Soviets and East Europeans have been acquiring microelectronic chips, and equipment and technology for their manufacture, from the West, often in spite of export controls. Almost all CEMA microprocessors are based on US designs. The ability to make such components is not well distributed around CEMA, with most of it located in the GDR and USSR. Although microelectronics is outside the scope of this paper, it is important to note that the East European countries are increasingly aware of their deficiencies in this area, and they are at least making serious noises about building up their indigenous industries. All eight of the CEMA participants in the cooperative computer agreements signed a major 1981 agreement on the creation of a common, standardized electronic components base for computer equipment and other needs. A formal division of labor in microelectronics is beginning to emerge, but it remains to be seen if this division will be as effective and well distributed as that for computer hardware.[10]

The CEMA countries have also tried to achieve technical and economic integration in systems and applications software, and in training and services. However, whereas they have respectable and fairly pervasive levels of standardization and interoperability in hardware, this is not the case for software and services. As one moves further from the hardware, standardization and integration become weaker. Thus there is more standardization and widespread use of a common systems software base (much of it "borrowed" from the West) than is the case for applications software. This is to be expected for other reasons, and is also true in the West. But the situation as it exists in CEMA, especially for applications software, is much weaker for fundamental economic and social reasons. For example, the CEMA economies have had serious problems resolving questions of pricing and ownership protection for design data and software.

C. Organizational Developments [11]

During the last 15 years an impressive array of computer organizations has been created at both the CEMA and national levels. The highest level CEMA organization that is totally dedicated to computer technology is the Intergovernmental Commission for Cooperation of the Socialist Countries in the Field of Computer Technology (MPKVT). MPKVT has a number of major subdivisions with purview over the ES and SM programs, peripherals, standards, services, production assignments, certification, test and monitoring equipment, systems and applications software. Since its inception, MPKVT has been headed by a Deputy Chairman of USSR Gosplan. Responsibility for electronic components for computer hardware is in the domain of the Permanent Commission for the Radiotechnical and Electronics Industry, although MPKVT seems to have involvement there as well.

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[10] [Rak82b]

[11] A more detailed, but still tentative and incomplete, discussion of these matters is [Mche81]. For a broad overview of CEMA scientific and technological organizations and their functions, see [Nolt82].

Our research on the MPKVT is incomplete, but some tentative observations are possible. Its effectiveness varies considerably over its domain. The MPKVT seems to have real control and influence over hardware, especially with the ES and SM programs, peripherals, production assignments and standardization. Progress has also been made in the areas of hardware service and systems software. The MPK role here is weaker, and most of what has been achieved is only noteworthy relative to the abysmal situation that existed before 1970. The MPK is least effective at the applications levels. Not surprisingly, effectiveness declines as we move from narrowly defined, technical areas that involve fairly isolated economic units, to areas that involve a larger spectrum of social and economic elements and relations.

IV. AN INTERNATIONAL DIVISION OF LABOR

In terms of real progress in international specialization, computing is a CEMA showcase. This section is concerned with the post-1970 character and evolution of the roles of the participants. Since each has defined a fairly distinct place for itself, we start with brief national summaries. The section concludes with several broader observations.

A. Bulgaria

In 1969, Bulgaria had the least developed computing industry in East European CEMA. While the Bulgarian initial condition should not be surprising to students of Eastern Europe, its present level of achievement might be. Bulgaria is a manufacturer of small computers and systems, fairly sophisticated peripherals, and unsophisticated electronic components. The number of different hardware products made by Bulgaria is impressive for a country of its size and economic background. There is no better example to support the claim that the CEMA integration program is raising the levels of the less developed members.

The most surprising of the Bulgarian achievements is its specialization in magnetic disk storage. This delicate electro-mechanical technology is one of the most difficult to master in the spectrum of computer hardware, and a niche the GDR would have been expected to claim. The Bulgarians are the main suppliers of disk storage to Eastern Europe, including the GDR.

With nothing to lose, and markets to gain, the Bulgarians were among the strongest early supporters of the joint effort. Within this framework, they have built an indigenous industry and a good export business in disks and electronic components. Initial involvement was made easier by relatively strong ties with the USSR and relatively weak links with Western firms.

This discussion of the Bulgarian success story needs some damping. The quality of Bulgarian products remains below that of contemporary Western counterparts, although they are competitive with some of the USSR's best. Its success within CEMA aside, the gap between Bulgarian and Western high performance secondary storage technologies is not closing. Finally, accomplishments in hardware construction are not complemented by comparable achievements in software, applications, and service.

B. Cuba

Cuba's computing activities have not been impressive compared with those of the other participants, but it is notable that a country with its background has an indigenous industry. Cuba builds minicomputers. A late (1973) signatory to the cooperative agreement in computing, Cuba's efforts were outside of the framework of the main CEMA program until the mid-1970s when it centralized and expanded its computing organization, became more involved with the MPKVT, and began active participation by bringing some of its minicomputer efforts into the SM program. It appears that essentially all of Cuba's current hardware and software production is consumed domestically.

C. Czechoslovakia

Czechoslovakia is also contributing to the "evening out" of the levels of achievement among the CEMA industries. Since the 1950s its computing community has been displaced from the top spot in Eastern Europe.

The Czechs were apparently reluctant to participate in the joint effort that began in 1969. No doubt, the political events of 1968 were a factor, but the relative strength of the Czech computer industry and hopes for technical ties with Western Europe were probably as important. The Soviet desire to get the Czechs to sign the 1969 agreement is self-evident. In return for this show of fraternity the Czechs were able to keep their distance from the central effort. Their contribution to the ES–I group was an incompatible Czech design with an ES designation. Their peripherals specialties were mainly unsophisticated electro-mechanical devices, a poor niche. Other countries were not dependent on the Czechs for anything in the same way they depended on the Bulgarians for disks.

The Czechs have not been able to build a broad and powerful indigenous industry, nor have they developed a strong computer export business with either the East or West. While they played in their own puddle, other countries claimed the best niches. The Czech industry became one of the most isolated in CEMA.

The Czechs themselves appear to be increasingly aware of what has happened, and there are indications they would like to get more involved. Their ES–II models are to be fully compatible, and they are active participants in the SM program. There is a greater desire to increase the export of peripherals and components to CEMA. But this will be an uphill climb.

D. German Democratic Republic

The East Germans are not overly concerned with leveling the East European industries. They have the outstanding computer industry, and are determined to stay on top. They have one of the best niches—the mid range mainframes—and are also developing a respectable microcircuit industry.

The industry is lead by the Robotron Combine, CEMA's best managed computer company. Robotron's products are well regarded, and it appears to have the best international training and repair services in CEMA. The usual German efficiency arguments aside, a good part of this success may be attributable to the relative freedom it has to behave like a Western corporation. Another strong manufacturer is Zeiss, which specializes in peripherals, notably magnetic tape units.

Having said this, it should also be pointed out that Robotron and Zeiss are nothing exceptional compared to the major US, West European or Japanese computer manufacturers.

E. Hungary

During the last 15 years, the Hungarians have moved from an almost non-existent computer industry to one of the most successful in CEMA. Their progress has been characterized by more style than that of the other participants.

Like Czechoslovakia, Poland, and Romania, Hungary initially demonstrated less than great enthusiasm for a joint program that was certain to be dominated by the GDR and USSR. Its contributions to the ES-I family were minicomputers, made under French licenses, that were incompatible with the IBM-like Ryads. However, the Hungarians found a good niche in minicomputers. They sold so many to the other CEMA countries that potential Hungarian users complained about not keeping enough at home.

The Hungarians have the low end ES-II model, which is fully ES compatible, and are active in the SM-II program. They have a good peripherals niche in terminals; produce other useful small peripherals, and build systems under foreign contract.

The leading Hungarian company is Videoton, one of the most aggressive of the CEMA computer manufacturers. Like GDR Robotron, it appears to be more motivated by export and profit than the "traditional" Soviet-style indices of performance. Although it lacks the size and technical competence of Robotron, it makes up for some of this deficiency with hustle.

Elsewhere in the industry, the Hungarians encourage and exploit some unplanned innovation and permit private ownership. For example, the first officially licensed, privately owned Hungarian software firm consisted of three people; and a fledgling, student run, company will be limited by all sorts of problems that will keep it from becoming much more than a curiosity.[12]

F. Poland

Computing was to have been one of the centerpieces of Poland's "new" intensive economic strategy. A grand program for computing was adopted calling for an investment of several billion zlotys during 1975-80. The Poles also seemed determined to remain distant from the joint CEMA effort and to rely instead on indigenous efforts and transfers of Western technology.

Like so many other aspects of Poland's economic strategy, the plan fell on hard times. For example, the 1974 plan called for the production of 600 medium sized computers during 1976-80, with half of these to be exported. Actual production during 1971-76 was more than 500 mainframes and 2,000 minicomputers. Later production fell from 105 mainframes in 1976, to 51 in 1979, to 15 in 1982. A peak minicomputer production of 489 in 1975 deteriorated to 120 in 1981. Exports were further under plan, averaging only about six machines a year during 1976–80. Part of this decline was explained by a shift in emphasis from computers to peripherals. This was certainly not due to a saturation of the internal market for computers. Polish users are clamoring for more and better equipment, and are distressed by patchwork measures forcing them to keep older models glued together with poor vendor support.[13]

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[12] We note that the product of this student-run company, the Homelab personal computer, used Western electronic components [Juha82].

To be sure, the general deterioration of the Polish economy has been a major contributor to the problems of its computer industry. However, the Polish industry has always kept some distance from any cooperative effort. During the 1960s, the Poles, like the Czechs, had built a relatively strong indigenous industry, and were understandably reluctant to divert resources from this effort.

The Poles and Soviets were to co-develop and co-produce a mid-range ES–I model. Originally, it may have been felt that the Soviets would gain most, since the Poles had been making products using ICL technology. However, the Poles built only a few prototypes of the first joint model, while the Soviets went into serial production with scores exported. An improved Polish model went into production, but few have been made, and very few exported. The improved Soviet counterpart is produced and exported in quantity. It seems that the Poles wanted to go their own way, overestimated their capabilities, and have been outperformed. The two countries have another joint mid-range model in the ES–II program. It is unlikely the Poles will cooperate more closely this time.

Poland's most apparent niche in the ES program was an ICL licensed printer. It also exports ferrite main memory, tape cassettes, and small quantities of other items. Participation in the SM programs is fairly weak.

G. Romania

Although a signatory to the cooperative agreement in computing, Romania's participation has been almost non-existent. It consists of a little rhetoric and a presence on assorted policy and certification committees. There are some signs of a softening of Romanian attitudes toward CEMA cooperation and trade in science and technology, but few of their computer products have even had CEMA labels. They have no CEMA specialty in hardware, and their cooperative role in the joint software program seems stillborn.

The route Romania has chosen to build a computing industry is via a centralized state enterprise CIETC, and the use of Western licenses and joint ventures. The net result is fairly satisfactory, at least for production to meet domestic needs.

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[13] Even under military law, the self assessment of the Polish industry remains the most frank and credible among the CEMA countries. For example, there were two recent articles on the effects of secrecy on scientific and technological progress [Basz83; Prte83]. In contrast to U.S. articles on this subject (for examples, see the references in Good82b]), the Poles seem to be more concerned with management's use of secrecy to cover up incompetence than with threats to national security.

H. USSR

Because of its singular military role within CEMA, and because of a domestic market that is larger than those of the other members combined, the USSR is the only participant country whose industry tries to cover the entire range of computing products and services. Its domain includes areas not covered by any of the other CEMA countries, notably large scale computers and certain areas in electronic components and software. This industry is distributed over several ministries.

I. Several Broader Observations

In 1973, at the first major ES–I exhibition, there was a partition of the Ryad computers. This division of labor was straightforward, with each country doing almost what it would have done had there been no cooperative program. The USSR covered the full range of machines. The East German and Hungarian programs for medium-scale mainframes and minicomputers were simply and usefully absorbed into the overall effort. Czechoslovakia and Poland expended some rhetoric and a minimum of serious effort to provide an integrated front, but went on with their own slightly modified plans. Romania ignored the whole thing. Bulgaria was happy with the "franchise" it got from the Soviets to build small Ryads.

The situation with regard to peripherals at this exhibition was more interesting. Almost every country announced a broad line of equipment. But whereas most of the computers were in shape for the unveiling (notably absent were the troubled large Soviet models), many of the announced peripherals did not show and were never to go into extended production. What appears to have happened is that each of the East European participants realized that it did not have the internal market, know-how, and production capacity to cover the full range of IBM-like peripherals needed for a system like the S/360. In the ensuing division, most went with their strong suits—for example, the Poles with their licensed printer, the Czechs with their expertise in low level electromechanical technology, etc.

During 1973–80, each country tried to consolidate its specialties. For example, approximately the same computer niches have carried over to the ES–II program, and Bulgaria has continued its disk program. Of note in this period is how well the Hungarians have been doing with terminals.

Since the late 1970s there has been some tendency away from division of labor specialties, although many of these were formally renewed in the 1980 agreement. Examples include the lack of a clear CEMA-level functional partition of the SM models, and encroachment on each other's hardware niches. With the growth of internal computer markets that has taken place over the last dozen years, there are now scale incentives for each to try to cover a broader range of its own domestic needs and to seek to improve trade balances through additional exports.

As noted in Section III, the cooperative software program has not fared as well as those for hardware. Under the MPK's Council for the Application of All Forms of Computer Technology, an organization with some superficial similarities to the MPK's Councils of

Chief Designers for the ES and SM programs, there is a formal division of software responsibilities. Thus, Bulgaria has responsibility for software used in designing frame and bridge structures, Hungary for accounting packages and systems analysis, the GDR for data base management systems, Cuba for the management of sugar cane production, etc. This represents a small fraction of the software universe. Furthermore, most of the countries seem to be doing a poor job of meeting their commitments, and the cross-national use of applications software is not impressive.

No CEMA member has committed its entire computer industry to the cooperative projects. In particular, Romania has committed almost nothing, and the USSR has sectors of its industry that we suspect many East European professionals do not know exist. What has been committed are many of the primary hardware research, development and production facilities, some key software and service organizations, and representatives to committees.

Our impression is that the division of labor among the CEMA computing industries has evolved naturally at least as much as it has been planned or forced by the Soviet Union. What has developed is primarily a result of de facto achievements, the distribution of pockets of expertise, the influence of domestic market size and character, the ambitions of the national industries and their abilities to haggle for what they want within the MPKVT and other CEMA forums. With few exceptions, the USSR seems content with this dynamic, as long as everyone is at least officially involved. Part of this tolerance is probably due to Soviet sensitivities about ramming too much down East European throats, but other factors include the lack of serious Soviet dependence on East European products and the reasonable successes and positive trends the cooperative effort has enjoyed.

V. INTRA-CEMA TRADE AND TECHNOLOGY TRANSFER [14]

A. The Extent of Trade

In 1980, a formal accord was signed that called for intra-CEMA computer and electronics trade to be in the 15–17 billion ruble range during the 1981–85 plan period. This would be approximately twice the 1976–80 level.[15]

Trade between the USSR and Eastern Europe probably accounts for at least half of intra-CEMA trade in computing and electronics. At the end of 1978, Soviet exports were growing at the rate of 10–15% per year, and the Elorg FTO (Foreign Trade Organization) could boast that Soviet computers were used in 18 countries.[16] However, all but a few dozen are used in CEMA. The East Europeans typically report that approximately 50% or more of their computer-related exports go to the USSR.

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[14] Constraints on the length of this paper are such that it is not possible to cover both intra-CEMA and East-West trade and technology transfer. We chose to concentrate on the former since it receives far less attention in the US literature. An article on the latter is [Good84g]. For a review of imports from the West, see [Task81].

[15] These figures probably include some non-computing microelectronics. All quantitative estimates presented in this paper should be regarded as rough approximations.

Some detailed statistics on East European computer inventories and trade are available. For a sample, see Appendix B.

[16] Importing countries include a few West European nations and the US. Unsophisticated Soviet-made electronic components, such as discrete transistors, are imported in some volume. However, imports of Soviet computer systems by these countries usually involve special circumstances, such as the sale of ES equipment to an Elorg computer center in Finland.

The Soviet market is so dominant and important to the joint effort that it is capable of dictating de facto technical standards. Although the Soviets produce almost the full range of computer products, they make less than they can use. The Soviets are not seriously dependent on imports from Eastern Europe, but they find these products useful and often of higher quality than what they make themselves. However, the East European economies all need more computer equipment than they are getting, and some of the more advanced user communities resent the export of so many of their products to the USSR.

The growth cited above is substantial in comparison with the past, but intra-CEMA computer trade volumes are still small relative to trade in the West. Until recently, Western computer shipments to Eastern Europe, especially if Romania is included, may have been comparable to Soviet shipments, although export control and hard currency problems have limited Western sales in the last few years. In both cases, 1978–79 annual levels were on the order of 30–60 medium sized mainframes, and 100–200 small mainframes and minis. Only the GDR and Hungary send a substantial number of computers to the USSR. It is too early to tell if this will change much under the ES–II, ES–III and SM–II programs.

Trade between the USSR and Eastern Europe in peripherals and components is more extensive, and the balance greatly favors the latter. For example, the Czechs anticipate that they will export 400 million rubles of computer equipment to the USSR during 1981–85, while importing about half that value. Since the Czech ES computers have not been viable for export, this trade consists mostly of Czech components and electromechanical peripherals in exchange for Soviet mid-range mainframes. All the East European industries send such equipment to the USSR, and it is possible that in all cases the value of these shipments exceeds that of the Soviet equipment they receive.

These trade patterns may change if the capabilities to produce microelectronic components continue to be concentrated in the USSR and GDR. Such components are increasingly fundamental to all systems, and the other CEMA countries may become more dependent on volume imports from the two leaders.

Most of the trade among the East European CEMA members is in peripherals and components. This trade and specialization enable them to assemble respectable user computing centers and products without having to build everything indigenously. In contrast, each East European country tends to build its computer inventory from internal production, and imports from the West and USSR. Only the East Germans and Hungarians have much of a trade in computers. We have seen very few Polish, Bulgarian and Czech ES–I models outside of those countries. We have not been able to discern clear trading patterns in SM systems.

A modest computer trade exits between CEMA and developing countries. The most notable connection is with India, where the USSR, the GDR, and Hungary have installed a small number of ES computers, where there may be a market for SM minis, and where the Elorg FTO has established a maintenance center and a marketing agent with a half dozen branches. A scattering of computer equipment is sold elsewhere, mainly to the Mideast. There have been systems development for Vietnam (a member of CEMA, but not a signatory to the major computer-related agreements); and Vietnamese observers have attended MPKVT meetings. Some trade is carried on with China.

B. The Conduct of Trade

We have a poor picture of how the CEMA countries conduct computer trade. For the most part, it seems to be bilateral and through specialized FTOs. There are multilateral features, such as monitoring by the MPKVT, and product mixes like the use of components from country A in a system built in country B and exported to country C. How much of the latter takes place cannot be judged from the available data. What is clear is that thousands of CEMA computer centers contain a multinational mix of interoperable equipment, and that considerable coordination and planning at the MPKVT and FTO levels is necessary to make this possible.

If there is something close to bilateral barter balance at the FTO product coverage level, and if we accept that none of the East European countries has the resources or market to pursue the entire range of computing products and technologies, then it is possible to argue that hardware interoperability and software compatibility were essentially forced on these countries by technical and economic considerations. No East European industry can make everything, but every respectable computer installation in each country needs a spectrum of equipment that includes some of almost everything. If only part of this can be gotten from the indigenous industry, the rest must come from other CEMA countries or the West. Much as many end users would like, they cannot buy all they want from the West. Given CEMA service and support, anything that is not technically interoperable or compatible is going to be worthless or at least a big problem for most users. Under these circumstances, each country needs something to trade on a bilateral basis or it will have trouble getting what it needs. To be viable, this something has to be what others want but do not produce themselves, and it must work together with everything else they acquire from around CEMA.

Although we lack details of how CEMA computer trade is conducted, it is clear that layers of foreign trade bureacracy, the lack of effective monetary, financial, credit and pricing systems, fetishes for security and control, and poor transborder communications separate the end user from its vendors to an extent that severely handicaps both. It is difficult for a potential customer in one country to find out what is offered abroad and to do some serious "shopping around." This practice has been enormously beneficial to Western users, and is an example of opportunities available in the West that are much more limited in CEMA. CEMA trade practices tend to keep vendors and users separated. This not only limits trade but, more importantly, it retards the effective utilization of computer technology.

One improvement in trade-related practice that has evolved over the last several years is in service and support for hardware sold abroad. Before then, users who bought equipment from another CEMA country were in deep trouble if they could not take care of it themselves. Now each major exporter has programs to train foreign end users and service personnel at centers in both the exporting and importing countries. Each country has established national computer service organizations to provide maintenance for both indigenously manufactured equipment and imports. Although the quality of training and maintenance varies considerably across CEMA, and most of it falls far short of Western practices, it does represent progress.

CEMA computer sales to developing countries are dependent upon a willingness to trade for services, commodities, and local currencies to an extent that Western vendors will not. One interesting arrangement involved the exchange of Soviet computer equipment for Indian software development on that system. High volume prospects are limited by: market size in developing countries, a technology where Western price/performance dynamics offsets CEMA discounts, and relatively poor CEMA service and equipment reliability. In some countries, notably the GDR, Hungary, and Poland, demand by internal users and the USSR is such that there is little left for developing countries.

C. Technology Transfer

The volume and levels of computer technology transferred between the CEMA countries is hardly as great as is sometimes advertised by the participants. However, with the much increased availability and use of computing during the last decade, there has come more extensive use of a number of technology transfer mechanisms including joint development efforts, formal training, and meetings of various kinds. In particular, multilateral conferences and bilateral projects have become fairly common.

The most striking of the intra-CEMA technology transfers are the bilateral joint development projects involving the Soviets and an East European partner. At the top of this list are the ES–I and ES–II efforts with the Poles (mid-range machines) and the Bulgarians (low end models and some peripherals). As we saw in Section IV, the undertaking with the Poles has not worked out particularly well. Examples of other joint technological undertakings include magnetic disk development with Bulgaria, and bubble memory and applications systems with Hungary.

Joint Soviet-Bulgarian undertakings are the most visible of the intra-CEMA technology transfer relationships. What seems to be a successful arrangement has evolved between the major Soviet research, development, and production facilities in Minsk and the heart of the Bulgarian industry, the IZOT Association.[17] This has enabled the Bulgarians to produce three Ryad models to satisfy much of their own needs. The Soviets may also have helped the Bulgarian electronic components industry. These components are not as sophisticated as those made in the GDR, and we do not know to what extent they are used in computer products, but the Bulgarians are producing and exporting in volume.

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[17] The Minsk-IZOT cooperation has some resemblance to the IBM "sister plant" arrangements [Good84].

For magnetic disks, the story could be different. It may be that the Bulgarians acquired their initial disk capability through various means from the West and Japan and through their own perseverence, with little help from the Soviets. It is also possible that, at least initially, the Bulgarians transferred more disk technology than they received from the USSR. As later generations of Soviet and Bulgarian disk products have appeared, it would have been expected that the Soviets would emerge as the more capable partner, but this may not actually be the case.

It is likely that somewhat different pairings exist between Soviet and East German firms, with most of the technology flow to the USSR. Some observers feel that certain GDR firms have unofficial "partners" in the FRG.

The East Europeans continue to be useful to the Soviets as a funnel for computer technology from the West and technology indigenously developed in Eastern Europe. Although the Soviets now offer more in return, they are still in a position to appropriate whatever they want and, with exceptions, they keep much of their own technology off limits to the other CEMA countries. There are East European computer engineers who fear doing so well in an area of interest to the Soviets that they will find their efforts and themselves "borrowed" for special projects.

Intra-CEMA technology transfers not involving the USSR appear to be limited to training, conferences, and other low level efforts. We have not been able to identify much in the way of licensing, turn-key plant establishment, etc.[18] These are the more active and effective production technology transfer mechanisms used by the CEMA countries to acquire Western technology. The East Europeans, socialist theories of free and fraternal technical information flow notwithstanding, are less than forthcoming when it comes to sharing their specialty technologies with their brothers.

Categories of transfer mechanisms used rather ineffectively by CEMA are those involving extensive, and long term, cross-border flows of people. Computer related travel across CEMA borders has increased greatly in the last decade, but most of this is for short training courses and conferences. The extent and quality of such travel falls far below levels found in the West.

VI. An Assessment

The 1971 Program and its follow-up literature discussed a number of goals that we will use to define "socialist economic and technological integration". These apply to the joint computing undertakings, and their achievement was expected to take place over the next 15–20 years. It has now been about a dozen years since they were first proclaimed, and almost 15 years since the formal start of the effort in computing. It is reasonable to test these goals against what has been achieved thus far.

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[18] The Soviets have helped at least one East European country (Hungary) set up a turn-key plant for the production of microprocessors, and other microelectronics arrangements may be forthcoming. So far only Bulgaria seems to have made much of helping the Cubans [Mari83].

To this end, we will consider eight goals taken from an extended discussion of the 1971 Program.[19] For each, we give a brief assessment of progress over the last 12–15 years.

a. A more rapid development of the productive forces in all the CEMA countries.

The enormous commitments to computing that followed the 1969 and 1971 agreements have brought growth rates to the CEMA computer industries that have been good by world standards. In the early and mid 1970s it was not uncommon to have hardware-electronics production increase by annual rates of about 20%. Growth during the second half of the 70s may have been at a respectable 10–15%. Similar rates are projected for the current Five Year Plan period. Greater hardware availability brought substantial increases in the volume of software and the number of trained people. At this time, it is fair to say that each of the East European CEMA participants has built a nontrivial computer equipment industry.

b. Satisfaction in the long run of . . . requirements for . . . modern equipment . . . mainly through the production and rational utilization of the resources of the CEMA member countries. (This will be interpreted as the desire to eliminate dependence on non-CEMA countries for critical items.)

Indigenous hardware production has achieved levels of quality and quantity such that there is little need to import the kind of equipment that was widely produced in the West in the early 1970s. Problem areas remain, e.g. high speed scientific computers, large disk stores, and telecommunications hardware. Enough software has been "borrowed" from the West, or built at home, to give CEMA a minimally viable inventory by reasonably modern standards. If Western computing should disappear overnight, CEMA computing would be able to chug along, although at a reduced rate. In some ways, the more Western computer technology they acquire, the less (not more) dependent they become.

c. The gradual drawing closer together and evening out of the economic development levels of the CEMA member countries.

The most notable cases in point are the development of the Bulgarian and Hungarian industries from essentially nothing to respectable industries with good export records. A certain "evening out" has also taken place because of the relative demise of the Polish and Czech industries. Romanian progress has been almost completely outside of the joint programs. Cuban progress has been nontrivial, but the rest of CEMA has not provided much help. Various technical and economic factors, notably successful complementary specialties and the lack of hard currency, have contributed to a "drawing closer together."

d. The strengthening of the defensive capability of the CEMA member countries.

A detailed discussion of this goal is beyond the scope of this analysis. However, the technical and economic strenghtening of the CEMA computer industries contributes greatly to Warsaw Pact capabilities. One needs only to look at the pervasive applicability of computing in Western military systems to appreciate the value of this technology, even granting arguments regarding differences in military doctrine and procedures.

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[19] A much larger set of criteria for evaluating the extent of integration is considered in [Good82; Good84]. These include 16 goals extracted from [Shap73], of which the eight below are a subset, and a comparison with some of the features of multinational technological integration associated with IBM.

A distinction should be made between technical state-of-the-art and functional capability. Most military computer systems around the world do not reflect the "leading technical edge." Certain technological levels are necessary or desirable to provide certain functional capabilities. The gap between the current CEMA level of technical achievement on the one hand, and the pre-1970 situation on the other, represents the opportunity for much greater functional capabilities in military systems—although the former is hardly world technical state-of-the-art.

e. To avoid the duplication of research and development work. To provide checks against work done elsewhere.

Certainly, the reproduction of Western designs may be considered the duplication of development and, to a lesser extent, research. However, this approach saved the greater duplication of effort that would have been necessary to produce comparable hardware and software of CEMA design. Little of the CEMA work has "checked" or improved upon developed Western systems. The Western systems they copied, for all their faults in retrospect, were exercised in test and user environments to an extent that still has not been achieved in CEMA.

At another level, the CEMA division of labor and specialization has saved the enormous duplication and waste of effort that would have been the case if each of the members had tried to build a complete range of hardware and software products. The extent to which they "check" each other is harder to guage. There are important CEMA-level standards and certification committees, and there is enough product redundancy across the countries (especially with the Soviets making almost everything), that they can carry on if one country fails to come through (there are exceptions: only the Soviets produce large scale machines, and the failure of the USSR here has been conspicuous).

f. The coordination of national economic plans and reciprocal deliveries.

The most direct and widespread "hard" evidence that this is being done with some success are the thousands of computer installations with intra-CEMA equipment mixes. This equipment works together, is reasonably well matched technically, and often arrives closely enough in time to avoid crippling delays. The socialist computer market is now economically and technically viable and self contained. However, its effectiveness and efficiency continues to suffer from major structural and behavioral problems.

The primary coordinating agency, the MPKVT, is organized into several permanent Councils which appear to have long term authority in working with the technical organizations and FTOs. In principle, the organizational coverage is comprehensive, but many complex CEMA organizations look better on paper than they function in practice. We have only spotty glimpses of the detailed operation of these bodies.

g. The formation of modern, highly effective, national economic structures.

There are at least three general categories to consider under this goal: (i) The establishment of new structures that serve the general economy, e.g. large computer-telecommunications networks; (ii) The reorganization of existing structures around computing, e.g. a more decentralized (or more centralized) management structure through the use of distributed data bases and management information systems; and (iii) The formation of structures within the CEMA computing industries.

The first two are beyond the scope of this study, although we have started detailed investigations. We mention them briefly because of their importance. All of the CEMA participants claim to be working hard in these areas, and there is much ideological noise associated with these efforts. In practice, enormous amounts of energy and resources are being expended. Much of this goes under the generic heading of ASU (automated systems of control and management), which refer to a wide spectrum of computerized systems, including process control and management information systems. Some of these are working in some fashion, but many are "Potemkin villages" or total disasters.

Within the CEMA computing industries, some notable progress has been made. The MPKVT has been established, and it seems to be working as well as could reasonably be expected. Each of the members has set up computer service organizations that are desperately needed improvements over what had existed before. Some of the participating countries have built computer companies with substantial technical and managerial capabilities.

h. Improvement of the forms and methods of cooperation in foreign trade and standardization.

Intra-CEMA trade in computing has expanded at respectable rates during the last dozen years, although absolute volume is still tiny in comparison with West-West trade. There appears to be some improvement in the way this trade is handled. All of the CEMA countries have improved their abilities to acquire Western computer products and technologies by both overt and covert means.

A number of hardware standards have been effectively established. Efforts to define and implement systems and applications software standards have been much less successful, but this is to be expected. Standardization has been made easier through the adoption of standards that have been formally or informally established in the West.

APPENDIX A. NOTES ON SOURCES

A few words on sources are necessary. There is a large volume of oral and written sources on CEMA computing. What is available is extremely fragmented and needs to be filtered for the useful content buried in the "low-grade ore." Much of the best information is technical, and may be used to make inferences and conjectures regarding policy and economic issues about which we have less direct information. For example, the fact that equipment from different CEMA countries operates together using standard IBM interfaces may tell us a great deal more than litanies on "fraternal socialist cooperation."

It is neither possible nor desirable to go into much technical detail in a paper of this length and intended audience. It also makes little sense to list literally thousands of fragmentary sources. The bibliography at the end of this paper has been limited to a few dozen references. Much more extensive, but still fairly limited, bibliographies may be found elsewhere: [Good82; Good84; Hamm83; Mund81].

It might be useful to comment on the reference identifiers (refids) in the footnotes and bibliography of this paper. At the University of Arizona, we maintain a family of computerized data bases on a software system known as the Arizona Analyst Information System (AAIS). One of these data bases contains bibliographic references to all source documents used in our research since the AAIS became operational in mid-1982. Each source is identified by a unique refid which consists of 2-4 alphabetic characters (usually chosen from the first four letters of the first author's last name or, if the source contains no identified author, 2-4 characters chosen from the publication or the title of the document) followed by the last two digits of the date of publication. If an attempt is made to enter other sources with a refid that has already been used, the AAIS catches this and a letter suffix is appended to the refid, e.g. Andr79, Andr79b, Andr79c, etc. Our papers are prepared on a text editor that is embedded in the AAIS, and refids are inserted as appropriate in footnotes or the main body of the text. The AAIS contains a program that "reads" the paper, extracts the references and prepares a bibliography from the master reference database. Using this tool, it takes less than five minutes to prepare a bibliography of several hundred references.

Use was made of articles from the following periodicals:

Algoritmy i Programmy
Automatizace
Automatizacija Poslovanja
Avtomatika Telemekhanika i Vychislitel'naya Tekhnika
Avtomatika i Telemekhanika
Avtomatika, Telemekhanika, i Svyaz'
Avtomatika i Vychislitel'naya Tekhnika
Avtomatizatsiya Proektirovaniya v Elektronike
BBC Summary of World Broadcasts, Part 1: The USSR (Weekly Economic Report)
BBC Summary of World Broadcasts, Part 2: Eastern Europe (Weekly Economic Report)
Belorussiya
Bratislava Pravda
Bulgaria Today
Bulgarian Foreign Trade
Computer Weekly
Constructia de Masini
Contemporanul
Danas
Die Wirtschaft
DIW-Wochenbericht
Doprava
Economic News of Bulgaria
Einheit
Ekonomicheskaya Gazeta
Ekonomicheskoye Sotrudnichestvo Stran-Chlenov SEV
Elektopromishlenost i Priborostroene
Elektrotechniky Obzor
Era Socialista
Esti Hirlap
Fernmeldetechnik
Figyelo
Finommechanika Mikrotechnika
FS-Analysen
Gazeta Krakowska
Gazeta Olsztynska
Gazeta Robotnika
Gazeta Wspolczesna
Glos Wybrzeza
Handelsblatt
Heti Vilaggazdasag
Hiradastechnika
Horyzonty Techniki
Hospodarske Noviny
Hungarian Foreign Trade
Ikonomicheski Zhivot
Informacio Elektronika
Informatia Bucurestiului
Informatyka
Ipargazdasag
Izvestiya
Jemna Mechanika a Optika
Jisuanji Shijie
Kep Es Hangtechnika
Kibernetika
Kulgazdasag
Kurier Szczecinski
Leningradskaya Pravda
Lidova Demokracie
Mechanizace Automatizace Administrativy
Magyar Hirlap
Magyar Ifjusag
Magyar Nemzet
Magyar Tudomany
Magyarorszag
Matematicheskcye Obespecheniye Vychislitel'nykh Sistem
Meres Es Automatika
Mirovaya Ekonomika i Mezhdunarodnyye Otnosheniya
Mlada Fronta
Moskovskaya Pravda
Muszaki Elet
Nauka Polska
Neues Deutschland
Nephadsereg
Nepszava
Nepszabadsag
Neue Zuericher Zeitung
Neva
Nove Slovo
Oslobodjenje
Osteuropa-Wirtschaft
Otechestven Front
Otlet
Pobjeda
Poland
Polish Engineering
Polish Technical Review
Pomauko Automatyka Kontrola
Praca

Pravda
Pravda Ukrainy
Programmirovanie
Pribory i Sistemy Upravleniya
Przeglad Mechaniczny
Przeglad Techniczny
Przeglad Telekomunikacyzny
PPTT Revue
Radio Fernsehen Elektronik
Radio, Televiziya, Elektronika
Rechentechnik Datenverarbeitung
Referativnyy Zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika
Referativnyy Zhurnal Kibernetika
Revista Economica
Revue Obchodu/Prumyslu/Hospodarstvi
Romania Libera
Rude Pravo
Rzeczpospolita
Rzeszow Nowiny
Saechsische Zeitung
Soviet Business and Trade
Soviet Cybernetics: Recent News Items
Soviet Cybernetics Review
Sdelovaci Technika
Slaboproudy Obzor
Sofia News
Sotsialisticheskaya Industria
Sovetskaya Belorussiya
Sovetskaya Estoniya
Sovetskaya Latvia
Sovetskaya Litva
Sovetskaya Moldavia
Sovetskaya Russiya
Soviet Export
Soviet Science
Soviet Union
Spisanie na Bulgarskata Akademiya na Naukite
Strojirenstvi
Sueddeutsche Zeitung
Svet Prace
Svobodne Slovo
Szamitastechnika
TASS
Technicky Tydennik
Technike Noviny
Technische Gemeinschaft
Tekhnichesko Delo
Trybuna Ludu
Trybuna Robotnicza
Tsifrovyye Ustroystva I Mikroprotsessory
Upravlyayushchiye Sistemy i Mashiny
USSR
Valosag
Vecherni Novini
Veda a Zivot
Vilaggazdasag
Vitchyzna
Vunshna Turgoviya
Vyber Informaci z Organicni a Vypocetni Techniky
Vychislitel'naya Tekhnika Sotsialisticheskikh Stran
Vychislitel'naya Tekhnika
Vychislitel'nyye Sistemy
Wiadomosci Statystyczne
Die Wirtschaft
Wirtschaftworke
Wirtschaftswissenschaft
Zemedelske Noviny
Zycie Gospodarcze
Zycie Warszawy

APPENDIX B. HUNGARY: COMPUTER INVENTORY AND TRADE

By CEMA standards, an unusually good set of computer trade and industry statistics are available from Hungary.[20]

In 1977, 521 general purpose computers were installed, then 0.07% of the world's inventory. Of these, 23% were made in Hungary, 38% were from other socialist countries, and the remainder from capitalist countries. Breaking the inventory down further: 58% of the minis were from Hungary, 14% from other CEMA manufacturers, and the rest from the West. Within CEMA, Hungary's imports come mainly from the USSR, with the GDR second. The two prime recipients of Hungarian exports are the USSR and Czechoslovakia. By 1979, Hungary had exported almost 300 minis to the Soviet Union; 2-3 years later this rose to around 400. Between 1972 and 1978, the Hungarians purchased at least 24 mid-sized machines and 133 minis from the West.

During the decade of the 1970s, the Hungarian computer inventory grew at an average annual rate of about 26%, with close to 1200 systems in place by 1980. While this growth rate is impressive, it is important to note that Hungary had only 20% of the per capita number of systems as compared with the EEC countries and far less than that in terms of per capita computing power.

Some Hungarian financial trade statistics are given in the table below. It is hard to interpret the balance of payments, because we do not know the extent to which hard currency or commodity trade was used in these sales. Also, part of the East to West computer "trade" claimed by Hungary, and other CEMA countries, may be in the form of buy-back arrangements that were part of Western licensing agreements.

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[20] Much of the data below comes from [Balo80; Szup81]. For additional information, see [Ban79; Demi83; Neme79; Pest82]. This represents a small fraction of what is available. Most of the inconsistencies across sources are not serious.

The table is from [Balo80]. There may be minor round-off or truncation errors. The distribution of some of this trade is interesting. The "other European" category consists mainly of Sweden and Switzerland. The two major "outside of Europe" capitalist countries are the US and, to a much lesser extent, Japan. "Developing countries" are mainly India and Hong Kong. A small item worth noting in the table is the trade with non-CEMA socialist countries. Some of this is with Yugoslavia, some may be with the People's Republic of China.

In comparison with Hungary, Czechoslovakia and Poland had more extensive trade with the West, although perhaps not on a per capita basis. Bulgaria and the GDR have less, and their computer inventories and trade distribution are more Soviet oriented. The GDR is thought to be particularly active in the covert acquisition of Western technology. Romania has a very small computer trade with the other CEMA countries. Much of its own production and inventory is through Western licenses.

HUNGARIAN FOREIGN TRADE IN COMPUTER TECHNOLOGY

Countries/regions	1976	1977	1978
Imports:			
Socialist countries	1,860	2,266	2,403
CEMA	1,856	2,263	2,399
Developed capitalist	1,068	1,591	1,959
EEC	506	837	1,090
Other European	320	394	311
Outside of Europe	243	360	585
Developing countries	17	11	0
Total	2,945	3,868	4,388
Exports:			
Socialist countries	3,102	3,619	3,942
CEMA	3,040	3,555	3,843
Developed capitalist	185	193	402
EEC	71	50	153
Other European	113	136	220
Outside of Europe	0	7	29
Developing countries	3	13	10
Total	3,289	3,825	4,354

Note.—All figures are rounded to the nearest million forints.

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